

# The Commercial Car Journal

VOLUME XXXVI

PHILADELPHIA, DECEMBER 15, 1928

NUMBER 4

## A New Publication—

**S**TARTING with the new year COMMERCIAL CAR JOURNAL will assimilate OPERATION & MAINTENANCE. The new publication will be known as COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE. It will mark a striking advance in business paper editing in both content and presentation.

Products developed for the advancement of truck transportation will receive an attention which space limitations hitherto forbade. New truck chassis, parts, shop equipment, accessories and truck bodies — special and stock — will be described in such detail as to give every individual in the commercial vehicle trade a thorough and invaluable knowledge of products.

Among the other new features will be a monthly tabulation of truck sales by makes by states and a distinctly original and attractive manner of typographical presentation.

In all its phases the new COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE will consolidate the position of intelligent editorial leadership in the truck transportation field already held by COMMERCIAL CAR JOURNAL. It will continue to assist the truck dealer in solving his many problems of management, salesmanship, merchandising and service, and in addition will record the ever-increasing uses to which trucks are put, and reveal in unmistakable terms the important part played by the truck in industrial, business and social affairs.

Altogether it will be a new publication, typifying a progressive move in pace with the fast-striding truck transportation industry.

# Dealer Produces Customers'

THE independent dump truck operator offers a substantial volume market to the truck dealer, but there is usually a fly in the ointment on this kind of business. The independent driver is generally a sincere buyer and easy to sell to, but his income sometimes does not keep pace with his hopes and intentions. Hence, delayed payments, repossessions, credit losses are too often the lot of the dealer who plays this market.

However, the McCoy Auto Co., White truck dealer of Vancouver, Wash., has found a way of safely cashing in on this truck outlet. This western territory is comparatively new, even though Indians and buffalo hunts have long since passed out of the picture. But there is a large amount of road-building, construction work and so on in the 11 counties in southwestern Washington in which this dealer operates, and hence there is a good demand for dump truck work.

But the small truck operator is at a disadvantage. The contractor does not like to parcel out the dump work to a large number of small operators. He would rather sub-let the haulage work to one outfit, and relieve himself of supervision. Consequently the lone operators were left out of the picture and found themselves with a good truck still unpaid for and no work to provide an income.

Of course the dealer who sells the trucks is vitally interested in this situation though it may seem to be entirely outside of his province as a merchant. C. C. Pelton, in charge of the truck department of the McCoy Auto Co., felt that this condition was very much the business of the truck dealer, and he set about to solve the problem which was so vitally affecting truck sales and collections.

Resultantly this company decided to act as a clearing house of employment for independent truck operators. The first thing Pelton did was to assume the role of a haulage contractor. The truck company would take one job for a specific amount, assume responsibility for the work, and thus meet the demand of the road or building contractor in this respect.

With this set-up the McCoy company has been able to provide work for drivers of White trucks. These operators thus get steady work. Incidentally this fact also has been quite a factor in sales competition as well as in collections. It makes good will and holds the customers to the house indefinitely. The buyer of a White truck knows that he will be given the edge on many of the bigger haulage jobs in the territory, and the McCoy company is assured of getting its money from the independent driver, for the income first passes through the hands of the firm.

This truck dealer has also been instrumental in bringing some of the larger independent operators together into partnership and company arrangements so that the

*McCoy Auto Co. Reduces Credit  
Serving as a Clearing  
house for tractors and*

ACME 6920-5

MOTOR TRUCK PROSPECT				SALESMAN		PRESENT EQUIPMENT		
TOWN	STATE	PHONE NO.	EX.	NO.	MAKE	YEAR	SIZE	
NAME		NO.			FORDS			
ADDRESS								
BUSINESS								
BUYERS NAME AND TITLE								
PREFERENCE								
PERSONS INTERVIEWED								
TRADE	NO TRADE							
LIVE PROSPECT								
GOOD PROSPECT								
FUTURE PROSPECT								
NAME								
FOLLOW-UP SUGGESTIONS FOR ADVERTISING				CHECK WHY THEY BUY THE COMPETING LINE				
				PRICE	MECHANICAL	TO STANDSTILL		
				DELIVERY	RECIPIENT	FAST DISBURSEMENT		
				TERMS	TRADE IN	WE DID NOT SOLICIT		
ADDRESS								

Mr. Pelton sets up a list of new prospects every year from license listings of truck operators obtained from the highway department. These are listed on prospect cards and followed up very closely. The front and back of one of these cards are shown. The firm's 3-ton service truck is shown at the right



## *it Losses and Builds Sales by House Between Con- Small Operators*

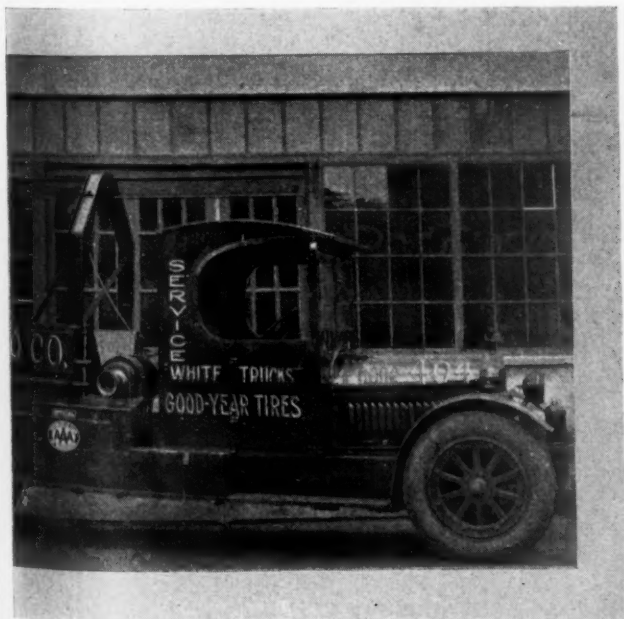
This company also does a good business with the truck freight operators in the territory, and the same policy of labor service is followed with these. The company has provided a loading platform in its plant which serves as a free terminal depot for the freight men. This also includes free telephone service, which is quite valuable to the

At any rate it is a service that pays big dividends, for the freight trucks are serviced in the McCoy shops at profitable prices, and the sale of tires to truck customers also

[illegible]

This company goes farther in this direction than most. For instance, in the shop are kept a number of extra service units, such as engines, steering gears, front and rear axles, transmissions, which can be quickly installed in all models of White trucks. Hence the trucks do not need to be laid up while regular truck units are being repaired in the shop. Of course, the company charges for the labor in making the change and a nominal rental per day, but the truck is not laid up and that's a big factor to the operator. Very often the operator chooses to retain the service unit, and then the serial numbers are changed to conform to the number on the original unit. This service is particularly valuable to truck operators who have regular routes, such as freight and milk haulage. These drivers must keep their trucks moving on schedule and the service units make this possible.

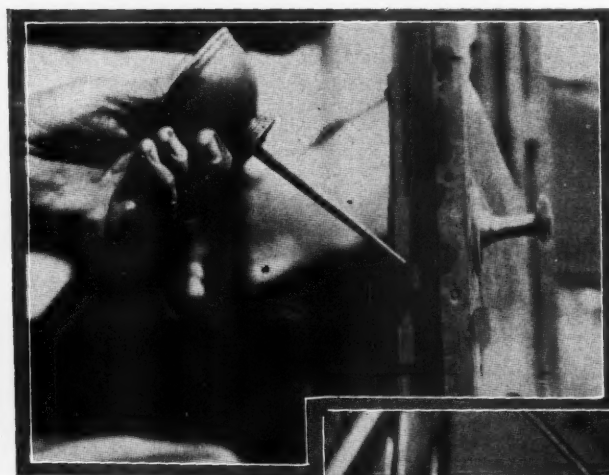
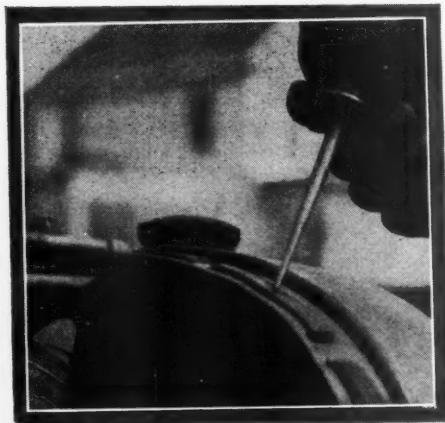
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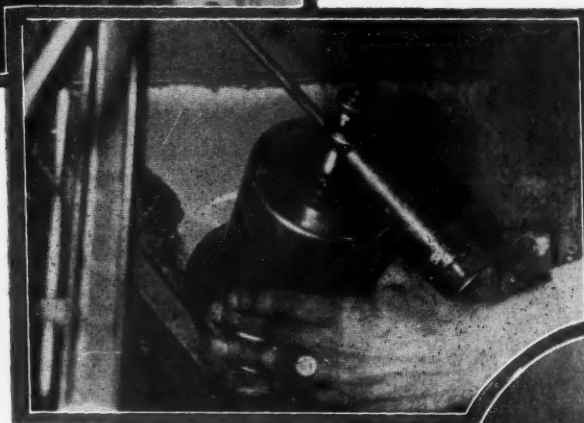
# Squeaks *and* Rattles

**S**QUEAKS and rattles in trucks are unpopular with the public and unpleasant to drivers but they furnish service salesmen with a two-fold opportunity for selling repair work. The first opening is the obvious one of selling a combination general tightening and lubrication operation to put a stop to the unwelcome noise. The second, and most important,

opportunity is that of using squeaks and rattles as indications that there is a defect in the chassis which should be remedied at once in order that increased maintenance cost or perhaps accidents may be prevented.



Hood noises indicate friction or looseness. Squeaks about the cab compartment may be prevented by lubrication. The gun, center, squirts oil to inaccessible places about cowl and body



A vibrating brake rod which touches a frame cross-member causes an annoying rattle. The noise is important because it indicates that the brake rod may be worn through in a short time unless the vibration is checked. Loose bolts on a frame bracket may cause a slight rattle at certain speeds of the vehicle. If the bolts are not tightened the holes in both frame and bracket will wear oval and it will be necessary to ream them and install larger bolts, or rivets.

*They Are Defect Reports and Opportunities for Sell*

*By James*

Squeaks, while just as unpleasant as rattles, do not have the same significance as the latter. The condition indicated by a squeak is that two parts are rubbing together which should not have any relative motion or that there is lack of lubrication of two surfaces which are expected to rub. The consequence of neglecting squeaks is not as serious as that of ignoring rattles but they are out of place in any well maintained truck.

There are two general lines of attack on squeaks and rattles. The first is tightening or adjustment of parts which are in contact, or which may contact, and the second is lubrication to prevent noise due to rubbing surfaces.

A routine chassis inspection should reveal ordinary causes of rattles, but in some cases it may be necessary to make a special check of those features likely to cause noise. Loose spring shackles and worn spring bolts and bushings cause a distinctive sound. Smaller parts, such as brake rods and clevises, may also attract attention. A loose tail lamp bracket can make a surprisingly large amount of noise and an insecurely fastened spare tire or bumper mounting makes a racket. Prevention of noise depends upon painstaking care in the examination of each part likely to be responsible.

In most cases inspection for squeaks and rattles will be combined in one and remedies will be found for both as the inspection proceeds. Squeaks in light delivery vehicles can usually be located by rocking the vehicle while it is standing on the floor or grease rack. This plan does not work so well on heavy duty vehicles and a trip over a rough road is necessary, a "listener" who perches himself at various points about the chassis and body being taken along.



# are Service Arguments

*Furnish Service Salesmen With  
ing Repair Work*

W. Cottrell

A check on hood, fenders, running boards and shields is perhaps first in such inspections. In the hood group the lacing is examined and lubricated or replaced, the piano hinge oiled and the fasteners looked over. Fasteners are subjected to a lot of movement and strain and deserve more attention than they usually receive. Hood sills are not to be overlooked at this time.

Tightening of all points of attachment to brackets or frame is the first step in eliminating noise from fenders and shields. This operation is not always as simple as it sounds, as many of the smaller bolts are exposed to splash from the wheels and are likely to be rusted. It may be necessary to use penetrating oil to loosen the bolts or in extreme cases to cut them off and replace them. A few well-placed shots of oil may put a stop to a host of squeaks but tightening should come first.

While the hood is being examined a check can well be made of the radiator mountings and brace rod. The mountings are not readily accessible in many cases and it may be possible to determine whether or not they are responsible for noise making and so avoid extra labor required to reach them. The radiator brace rod can cause much annoying sound, especially if it is bolted to the dashboard.

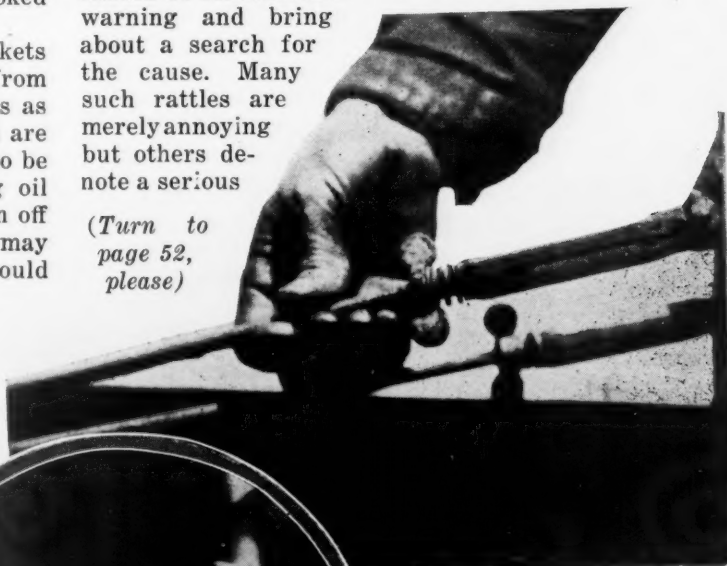
The radiator brace rod furnishes a good illustration of the importance of a rattle as indicating the need of repairs or adjustment. If a brace rod is loose, damage is likely to result to the radiator, hood and cowl due to movement of the radiator.

Any rattle at this point should be investigated immediately.

Doors, hinges, locks and stops are among the points about the cab to be checked. Door hinges require lubrication but are frequently neglected. Door stops are constantly in action and also require attention. Another cause of squeaks in the cab enclosure may be the floor boards, particularly those more or less permanently fixed in place and those in contact with the dashboard. These places are rather hard to reach and time can be saved by oiling them by means of a special gun which discharges a jet of oil under low air pressure. Such a gun is shown in one of the illustrations accompanying this article.

A rattle arising in any part of the brake system should be considered a warning and bring about a search for the cause. Many such rattles are merely annoying but others denote a serious

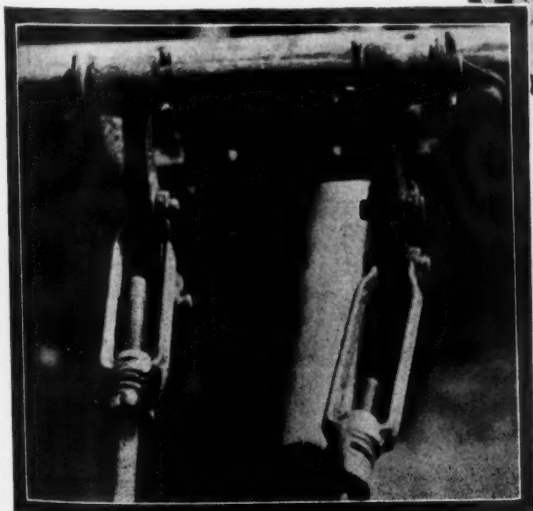
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Above: Brake clevises and levers should be inspected regularly



Above: Squeaks in hood fasteners are easily cured. Left: Neglect of brake rigging causes squeaks and rattles



A rattle in a brake rod is a warning which should not be neglected

# Commercial Car Journal

## Flat Rate Price List Number 24

### Reo Engines

#### Rod Bearings

1. Remove and replace connecting rod assemblies.	
F4	\$10.85
T6	10.60
Jr.	13.40
F & G	11.20
2. Align connecting rods after they have been removed.	
F4	2.10
T6	2.65
Jr.	2.65
F & G	2.65
3. Connecting rod bearings adjust after the oil pan has been removed.	
T6	4.40
Jr.	4.40
F & G	4.40
(A) Connecting rod bearings adjust after hand hole covers have been removed.	
F4	2.10
4. Connecting rod bearings adjust all.	
F4	3.35
T6	7.55
Jr.	7.55
F & G	8.10
5. Connecting rod bearings, renew and align one and adjust others.	
F4	15.60
T6	11.60
Jr.	11.25
F & G	13.00
(A) Renew and align each additional connecting rod bearing.	
F4 (in same block)	2.80
T6	2.80
Jr.	2.80
F & G	2.80
6. Renew and align all connecting rod bearings after rods are out.	
F4	16.30
T6	16.30
Jr.	13.15
F & G	16.30
7. Refit one connecting rod bearing after oil pan has been removed.	
T6	2.40
Jr.	4.45
F & G	2.40
8. Refit one connecting rod bearing after bearing has been removed. Does not include replacing oil pan or other parts.	
F4	2.30
T6	2.30
Jr.	1.75
F & G	2.30

#### Main and Connecting Rod Bearings

1. Main bearings adjust all after hand hole plates are off.	
F4	\$ 2.65
(A) Main bearings adjust all after oil pan is off.	
T6	4.10
Jr. (non-adjustable)	
F & G	4.10
2. Main and connecting rod bearings, adjust.	
F4	6.00
T6	12.55
Jr. (main bearings non-adjustable).	
F & G	13.10
3. Main and connecting rod bearings adjust all after hand hole plates are off.	
F4	4.75
(A) Main and connecting rod bearings adjust all after oil pan is off.	
T6	8.90
Jr. (main bearings non-adjustable).	
F & G	8.90

4. Main and connecting rod bearings renew all and align rods after engine is out.	
F4	28.00
T6	38.35
Jr.	43.60
F & G	43.95
6. Main bearings only renew all.	
T6	31.00
Jr.	34.50
F & G	42.20
(A) Main bearings renew after engine is dismantled.	
F4	10.10

#### Crankshaft

7. Regrind crankshaft, renew main and connecting rod bearings and align rods.	
F4	\$40.35
T6	64.70
F & G	71.80
8. Renew crankshaft, main and connecting rod bearings and align rods.	
F4	37.15
T6	44.30
Jr.	44.65
F & G	44.65
9. Crankshaft end play adjust.	
F4	4.75
T6	7.35
Jr.	9.70
F & G	8.00
10. Crankshaft end play adjust with hand hole covers off.	
F4	3.50
(A) Crankshaft end play adjust with oil pan and front cover off.	
T6	4.20
Jr.	5.80
F & G	4.20

#### Valves, Tappets, Rocker Arms

1. Grind valves, clean carbon and tune engine includes: refacing valves and seats, cleaning and adjusting breaker points and spark plugs, cleaning fuel supply and carburetor screens, adjusting valve tappets and fan belt, and retiming ignition.	
F4	\$19.75
T6	19.20
Jr.	17.20
F & G	19.20
(A) Grind and reface valves and seats, clean carbon and tune engine after cylinder head is off.	
T6	15.85
Jr.	14.75
F & G	16.40
2. Grind and reface valves and seats, clean carbon and adjust tappets only.	
F4	15.25
T6	14.60
Jr.	12.60
F & G	14.60
3. Valve stem guides only renew in connection with carbon and valve job.	
F4	1.60
T6	2.65

#### NOTE

Engine operation prices given on this page are continued from page 17 of the November issue. Additional operations including camshaft, clutch transmission and electrical equipment will be given in an early issue.

Jr.	2.65
F & G	2.65
4. Valve stem guide renew one in connection with carbon and valve job.	
All models	.35
5. Guides, ream oversize and install oversize stem valves in connection with carbon and valve job.	
F4	1.75
T6	2.50
Jr.	2.50
F & G	2.50
6. Adjust valve tappets to factory recommendation.	
F4	1.40
T6	1.75
Jr.	2.30
F & G	1.75
7. Renew one exhaust valve spring.	
F4	.50
(A) Renew one inlet or exhaust valve spring.	
Jr.	3.25
8. Tappet screws renew all in connection with carbon and valve job.	
Jr.	3.00
9. Tappet and tappet guides renew all.	
T6	9.75
F & G	9.00
(A) Tappet and tappet guides renew all after valves are out.	
F4	2.65
Jr.	2.30
10. Tappet and guide assembly remove and replace or renew one.	
F4	2.00
T6	3.00
F & G	2.30
(A) Each additional tappet and guide assembly.	
F4	.75
T6	.75
F & G	.75
12. Tappet cluster assembly, remove, overhaul and replace one.	
Jr.	3.50
(A) Each additional cluster assembly.	
Jr.	1.75
13. Rocker arm shaft and bushings renew.	
T6	5.50
F & G	5.50
(A) Renew one rocker lever assembly and adjust valve.	
F4	.75

#### Timing Chain, Sprockets, Gears

1. Timing case cover remove and replace includes removing and replacing radiator.	
F4	\$ 5.85
T6	4.25
Jr.	4.25
F & G	5.50
2. Timing chain, adjust.	
Jr.	.60
3. Retime valves.	
F4	9.30
T6	8.75
Jr.	9.00
F & G	10.50
4. Renew all timing gears.	
F4	16.75
T6	13.50
F & G	14.50
(A) Renew crankshaft and camshaft sprockets.	
Jr.	8.25
5. Renew all timing gears after front cover is off.	
F4	8.40
T6	7.45
F & G	7.70
(A) Renew crankshaft and camshaft sprockets after front cover is off.	
Jr.	2.30

# Does Fleet Maintenance on a Monthly Basis Pay?

*Service Stations Making Money Demand a Fair Rate, Use New Replacement Parts and Secure Cooperation of Drivers*

By Mandus E. Bridston

FIVE years ago a Seattle service station conceived the idea of maintaining commercial fleets on the basis of a flat monthly rate per truck. Other service stations quickly took up the plan. Some quit in disgust before the project had passed the experimental stage—and there's a reason. A few stayed by their guns and are making money for themselves and fleet owners. One ambitious dealer, who does this kind of service work, is contemplating extending the idea to furnishing new equipment to fleet operators on a rental basis.

Briefly the plan involves an agreement, usually verbal, whereby a service station agrees to do all necessary maintenance and repair work on a fleet for a certain period at a stipulated sum for each truck per month. The fee ranges from \$12 to \$16 per month for Ford or Chevrolet trucks and proportionately higher for larger units, not including repairs caused by accidents.

This method of maintenance work appeals strongly to the fleet operator. He is relieved of many worries incidental to fleet maintenance. His problem resolves itself merely to storage, which is generally a simple matter; gas and oil consumption which is easily checked and tabulated; and of course the replacement of equipment. But the most uncertain and fluctuating item of operating cost, repair work, is whittled down to a definite figure each month, and hence his mark-up to include fleet expense can be figured definitely. There is a distinct advantage in being able to predict fleet maintenance expense with a degree of certainty, for then this item can be passed on to the consumer with reasonable accuracy.

However, the fleet operator is compelled to use judgment in the selection of a service station and if he lacks in this respect or expects to get something for nothing he is doomed to disappointment in the flat rate arrangement. On the whole, and under the right conditions, the contract basis of fleet maintenance works to the advantage of the fleet operator.

But for the service station the problem is a little more complex. Its purpose is to fill the shop with volume business without the need of expensive solicit-

GENE CAMPBELL of Seattle is handling a lot of fleet work on a monthly rate basis and has boiled his experience down to a definite policy. He feels that fleet maintenance conducted on a sound basis benefits both the dealer and the fleet operator, representing a steady source of revenue for the service department and relieving operators who have neither time nor facilities to do their own work. Mr. Campbell's program for handling fleet business is outlined in the accompanying article.

ing, job for job; he wants the entire fleet business for a year and is willing to gamble on average conditions. The writer interviewed a number of service stations which have done or are doing commercial maintenance work on a flat monthly basis, and with a few exceptions the chief complaint was "the fleet operator refuses to pay a price that will permit us to make a living."

Besides the question of price, there are two other factors with which the garage must contend in handling fleet maintenance on

the monthly basis. It is natural enough for the fleet operator and the drivers to get careless in handling trucks, when no dollar and cents penalty is involved. The manager of one service station used rather strong language in speaking of this phase. "The drivers drive hell out of the trucks when they know the boss won't hold them responsible. The boss doesn't give a damn so long as the repair work costs him only so much per month regardless." This situation is not universal, and it can be met, as another Seattle service station has proved. Then of course, there is the matter of price fluctuation of replacement parts, which makes it difficult for the service station to make a fair bid for the work that will protect it. Even this aspect is not too great an obstacle.

Referring specifically to individual service stations doing this class of work, there are more failures than successes. One service station found itself doing \$1,800 per month business in truck maintenance on the flat rate basis. In a year the loss on the business totaled \$1,000. The manager attributed the condition to a lack of judgment in selecting fleets in fairly good condition, and neglecting to insist that the trucks be placed in good running condition before the flat rate basis became effective. Resultantly the major portion of the annual income was devoted to initial overhaul work, without sufficient allowance for regular maintenance service. The second year paid the garageman a profit.

The outstanding success of the system was found at the Gene Campbell Garage, where this plan was started five years ago. This garage is located in an

industrial district, hence the management found it advisable to specialize in commercial fleet work.

"I've tried every conceivable way of beating the game with flat rate monthly maintenance," Mr. Campbell reports, "and finally I've boiled down my experience to a definite policy."

His is a three-point program:

1. Gaining good will, and cooperation of the drivers.
2. Using only new, standard replacement parts.
3. No written contract.

"The truck drivers can either make me or break me," declared Mr. Campbell, "and they know it. They can either run the life out of a truck or use ordinary care in driving. It is of the utmost importance that drivers are a satisfied and contented lot. I try to use the greatest tact working with the driver in order to gain his good will and confidence. It may be annoying sometimes to have a contract truck come into the place just when the shop is busy with profitable transient work, which must be dropped immediately to give service to the flat rate job. But I try not to indicate this in any way. In fact, I emphasize the importance of bringing a truck in at the first sign of ailment. Furthermore, I find that the driver will take good care of a truck that is running smoothly, whereas he'll be indifferent if the machine isn't hitting on all six. Hence, we try to use the greatest diligence in tuning up the engine. Makeshift repair work, that just gets by, is a boomerang to the garage, for invariably it means careless driving. With this policy we have had trucks run as many as 40,000 miles without an overhaul, largely because of the cooperation secured from drivers."

That leads us to the second platform of Campbell's program—the use of new parts. "The only way we can make money maintaining trucks on a contract basis is to keep them out of the shop," Campbell emphasized. "I've tried the 'economy' of working in used parts, but it doesn't pay. The trucks no sooner get out the back entrance, until they're back through the front door. Putting in high-class new parts has reduced the labor expense fifty per cent."

The policy of a verbal contract with the fleet operator is based on the theory that the written word results in disputes according to the letter of the agreement, rather than an equitable understanding of the spirit of the contract. Then there is the periodic renewals to consider—a time for bickering. Campbell's contracts run indefinitely—until one party or the other is dissatisfied. "I feel that a man, whose gentlemen's agreement isn't to be depended upon, is not the kind of customer that I want," Campbell explains.

Obviously, proper shop equipment is one of the determining factors in successfully doing contract work of this kind. The margin of profit is necessarily small, and use of time and labor-saving devices are necessary to show a net profit. In servicing 75 commercial trucks, this garage uses equipment valued at \$7,000. Fluctuation of prices of parts is alleviated by stocking a reasonably large supply. This plant carries about \$1,000 in Ford parts alone, and proportionately less for the larger units, which form the smaller number in the fleets he services.

Campbell requires the trucks to come to the shop at least once a month for greasing and oiling. Twice a month the batteries are serviced. The trucks are posted on a chart by number and are checked off as these routine operations are performed.

This garage receives \$16 per month for each Ford truck serviced, and this make forms the bulk of all the fleets handled in this manner. This price is higher

than the average, which indicates that the fleet operators are willing to pay for what they get, when they are assured of quality service and conscientious attention.

A Seattle dealer, who has extensive service facilities for commercial fleets, and who has been experimenting with the contract system, is now compiling data with the view of furnishing fleet operators with new equipment on either a mileage or a monthly rental basis, depending on the surrounding circumstances of each fleet.

This dealer did not divulge what his figures would be, but obviously the arrangement has possibilities. The fleet operator would reduce his delivery expense to an exact mileage basis, and give him something definite to figure on. Volume buying of bodies, chassis, tires, oils, parts, etc., on the part of the dealer would represent distinct savings, which would in turn be reflected in lower transportation cost so far as the fleet operator is concerned. In this effort the dealer is making surveys of operating costs of several fleets with a view of showing the fleet operator that it would be an economy to junk entire fleets and replace them on mileage or monthly contract basis with new equipment.

This plan may prove a boon to fleet operators who have neither the time, facilities nor inclination to operate a fleet on an accurate, scientific basis. Certainly the specialist with volume business could do this at a decided saving, and this could be passed on to the fleet operator as reduced delivery cost.

## *When the Used-Truck Shopper is Tired*

*William Klee Gives Him a Chance  
to Relax and Then Talks  
"Iron" to Him*

SHOPPING for a used truck usually is a long and tedious job involving a lot of walking and standing around. After a few hours of this a prospect is tired and the more tired he is the harder he is to sell. Taking advantage of this fact has helped William Klee in charge of the used truck department of the International Harvester Co. branch in Pittsburgh to sell used trucks.

Instead of asking a prospect who comes in to the used car department what sort of a truck he is interested in, Mr. Klee invites the prospect to sit down in his office. There are two or three chairs in the office and they are comfortable to sit in. The invitation is in almost all cases accepted with pleasure and the prospect settles into one of the chairs with a sigh of relief. To give the prospect a chance to relax, Mr. Klee starts a conversation in which trucks play absolutely no part. Sports and front-page topics of the day are discussed for several minutes. Having put the prospect at ease mentally and physically, Mr. Klee brings up the question of a used truck rather casually. "What sort of truck are you interested in?" Mr. Klee asks, and the prospect usually explains what he has in mind.

Few used truck prospects have any illusions concerning the value of trucks offered to them. They do  
(Turn to page 52, please)

# \$400 Down— Not a Dollar Less!

By Martin J. Koitzsch

PARDON me a moment please." With this the assistant branch manager of the Philadelphia branch of a well-known truck manufacturer reached over for his telephone and there followed an interesting dialogue with an unknown person, presumably one of the company's salesmen. The subject concerned a prospective truck sale involving paper and a trade. While one-sided, the conversation which ensued was self-explanatory:

"What? \$250? Not enough!"

"If you can get \$400 down then we'll start to talk business."

"No sir, not one dollar less."

"I said not one dollar less."

"Listen, young man, it



just isn't in the cards. What does he want for the old wagon?"

"How much? Why that old wreck isn't worth \$200."

"What, what was that?"

"We don't care what he thinks, it isn't worth it."

"If you can get \$400 cash down and get him to accept \$200 on his old truck then we'll do business."

"Humph, if he thinks he can get \$400 for it why not let him sell it? It'll mean \$200 gravy for him."

"Well, you heard our proposition, sell it to him and then we'll talk turkey."

"We're not going to repossess any more and we're tired chasing from New York to Cape May trying to make collections."



"We did, in fact I have his credit report before me. He looks suspicious to us. Can't get a line on him from the dealer who sold him his present truck. He had a job in Philadelphia, where he was held as irresponsible. Besides, the people in his community don't regard him very highly."

"Will he mortgage his home?"

"I thought not. I wouldn't be surprised if he borrowed the \$250 that he hoped to use for a down payment against his home. He probably hasn't got much more than that in it."

"It doesn't look right to me. But if you can get \$400 and you can find a buyer for his old wagon, then I'll talk with you some more. Good-bye."

After hanging up, he turned to the writer and beamed, "That's the way we figure on licking that proposition. We're through handling shady business."

A short time afterward, the bell again demanded attention and the subject again involved a possible sale.

"Yes, Steve, I'm afraid we will have to turn him down."

"What—what was that—substantial payments?"

"I know, old man, but substantial down payments have become the rule and not the exception with our new set-up. A substantial down payment alone is not a sufficient reason why we should assume a risk on a paper deal."

"As far as we know he's conscientious enough, but his record shows that he has been pretty slow in coming across with payments on his present trucks. The collection department is always on his heels."

"I said we waste a lot of time making collections."

"He may be a good fellow but we can't make money on personalities. This is strictly a business matter."

"No, I don't question his honesty, but I do question his ability to meet his present obligations. So I don't see why we should gamble on the uncertainty that two more trucks will increase his business sufficiently to ease his present payments as well as his new ones."

"But he is a risk, that's where we don't check. If his business was good why did he slip up on his notes?"

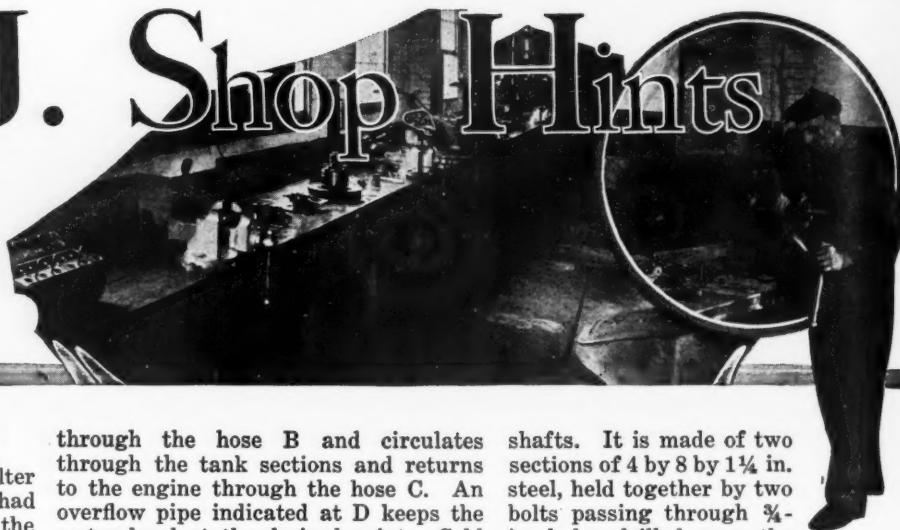
"Sorry, but he will have to show us that his present trucks are bringing in a profit. His delinquency certainly doesn't show it."

"Yes, but his present account will be on our books

(Turn to page 52, please)

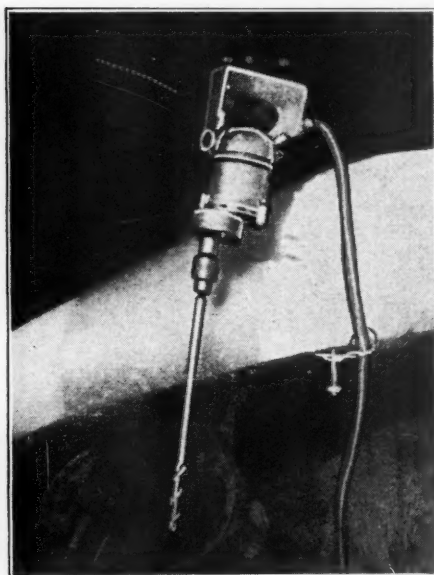
# C. C. J. Shop Hints

Your idea in print will  
return five dollars



## Tie the Chuck Wrench

LIKE many other service men, Walter L. Hillyer, New London, Conn., had trouble keeping the wrench for the chuck on a portable electric drill within reach whenever he wanted it. He overcame the difficulty by tying the wrench to the electric cable on the drill at a point about 2 ft. from the handle. A loop of wire is made about the body of the wrench and a spiral wound around the cable. In use the loop about the wrench is slipped down from the handle and the wrench is rotated within the loop. To prevent possible damage to the electric cable it would be well to protect it from the spiral of wire by a fiber tube or other approved insulation.



Drill chuck wrench is tied to the electric cable

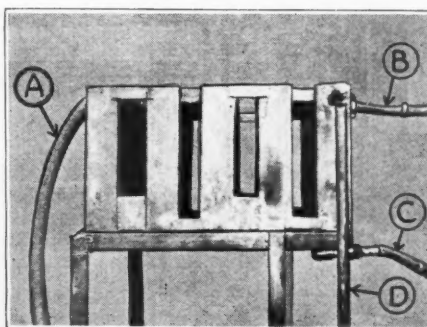
## Cooling Tank For Engines Under Test

A COOLING tank for use with engines being run-in or tested by an electric dynamometer is in use in the shop of the Equitable Auto Co., Pittsburgh, Pa. It takes the place of a radiator or plain tank commonly used for this purpose.

There are five vertical sections, as shown in the illustration, all open at the top and joined together by horizontal sections at the top or bottom. Water from the outlet of the engine enters

through the hose B and circulates through the tank sections and returns to the engine through the hose C. An overflow pipe indicated at D keeps the water level at the desired point. Cold water is supplied through the hose A.

A thermometer is supported at one corner of the tank and the feed of cold



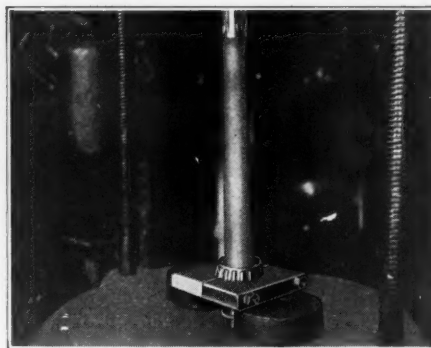
Cooling tank used while testing engines on a dynamometer

water is regulated to maintain temperature in case radiation from the sides of the tank is not sufficient for this purpose. Due to the volume of water in the tank rapid changes in temperature do not take place.

The tank is supported on a stand made of angle-iron welded together. Welding is also used for making the tank sections and joining them together.

## Roller Bearing Jig

THE bearing jig shown in the illustration is used in the shop of the Bus Transportation Co., Denver, Colo., for removing roller bearings from axle

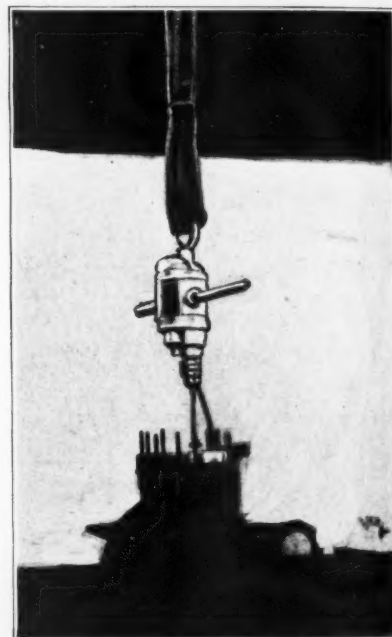


Roller bearing being removed from axle shaft by use of two-piece jig

shafts. It is made of two sections of 4 by 8 by 1 1/4 in. steel, held together by two bolts passing through 3/4-in. holes drilled near the edge of each piece. A circular seat is machined in the steel sections to fit the bearing and a hole in the center permits the axle to pass through.

## Support for Drill and Hone

DISCARDED inner tubes are used by Peter H. Snavely, Manheim, Pa., to support a portable electric drill while



Old inner tubes are looped together to form an elastic support for a drill driving a cylinder hone

driving a cylinder hone. The tubes are looped through the handle of the drill and carried to a beam overhead. Tension is such that the drill is suspended in a position with the hone at the top of the cylinder.

## Cleaning Clogged Radiators

A METHOD of using successive spurts of air and water to clean clogged radiators has been developed by the research staff of the Procter & Gamble Co., New York, N. Y. The process is carried on without dismantling the radiator and no special equipment is

required other than a supply of air and of water under pressure. A description of the operation follows:

"The radiator is removed from the car and a water hose is connected to the pipe at the bottom of the radiator, where the bottom hose connection is usually attached. The pet-cock at the bottom of the radiator is removed and a small nipple is put in place of it and connected to an air hose. The pipe where the top hose connection attaches to the radiator is closed with a large cork. With the radiator cap removed, and the radiator standing upright, the water is turned on gradually and allowed to flow out at the top of the radiator. If hot water is available for the purpose, so much the better. The air is then turned on in spurts, a little carefully at first, and then in bigger spurts, to blow a mixture of water and air up through the radiator core. This is continued for a few minutes, the radiator being allowed to fill with water between the spurts of air; or the water and air may be allowed to flow through steadily together at a rapid rate for a few minutes."

### Liquid Solder for Radiator Repairs

MELTED solder may be employed for repairing radiators in place of the more customary method of heating the solder with an iron, according to W. E. Warner, Brentford, England. The procedure he advises for honeycomb radiators is as follows: Mark the sections where leaks occur and coat these sections with whitewash. Clean the joints which are leaking and apply flux or soldering liquid. Support the radiator over a tray and pour melted solder from a ladle onto the joints. The making of a neat joint will be aided by the use of a swab.

The purpose of the whitewash is to prevent the solder from adhering to parts which are not to be soldered and also to protect the sound joints from the heating effect of the solder poured over them.

Somewhat the same method may be

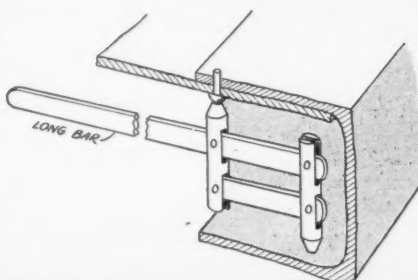


Molten solder is poured on radiator surface. Parts not requiring solder are protected by whitewash

used to repair tubular radiators. The tank is given a coat of whitewash and the tubes are cleaned at the point of entrance into the tank. The radiator is then dipped in molten solder to a depth to cover the junction between tubes and tank.

### Backing Frame Rivets

PLACING rivets in frame flanges often is difficult because the head of the rivet is inaccessible to ordinary "backing-up" tools. The device shown is recommended by Morris A. Hall, White Plains, N. Y., for such jobs. It consists of a long bar or handle, a short bar and a pair of circular parts, each of which is slotted at one end



Special tool for backing rivets in out-of-the-way places

and cupped and hardened at the other. The parts are assembled with pins which permit movement of the bars within a limited range. The cup at the end is used for rivets near the vertical section of the frame and the other cup is employed for rivets near the edge of the flange.

### Valve Stem Finish

A CHANGE in the method of finishing valve stems during carbon and valve jobs has reduced complaints of sticking valves, according to the experience of John R. Graham, service manager, Thornton-Fuller Co., Graham Brothers distributors in Philadelphia. No extra equipment is required and the idea can be used with any type of valve refacing machine or on hand jobs.

The method consists of polishing the valve stem with fine emery paper rubbed *lengthwise* of the stem by hand. This process has been given the name of "longpapering" and it follows but does not replace the customary cleaning and polishing of the stems.

Valve stems are cleaned in this shop by rotating them in a motor headstock lathe and holding a piece of emery cloth in contact with the stem. Formerly the stems were cleaned by hand with a blunt knife or hacksaw blade. A few cases of valves sticking were reported and Mr. Graham decided that sticking was caused by the accumulation of minute particles of carbon in the fine scratches running crosswise of the stems. These scratches were the result of the lathe-emery paper treatment. He decided to try a final finishing which would leave the scratches running lengthwise of the stems.

Micro-photographs of the results of the two methods of finishing valve stems as practiced in the Thornton-Fuller shop are reproduced herewith.

The cross scratches are shown in Fig. 1 and the lengthwise scratches in Fig. 2. Both were made with the same grade of paper. It will be noticed that in addition to a difference in direction of the scratches that Fig. 3 shows a "smoother" finish.

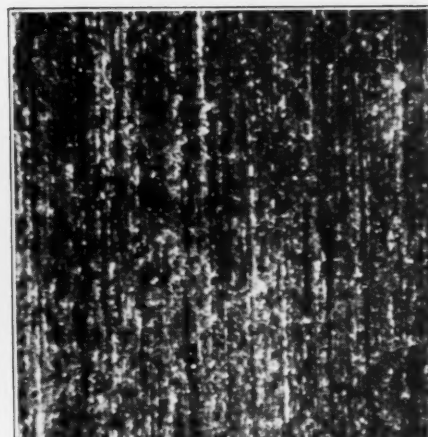
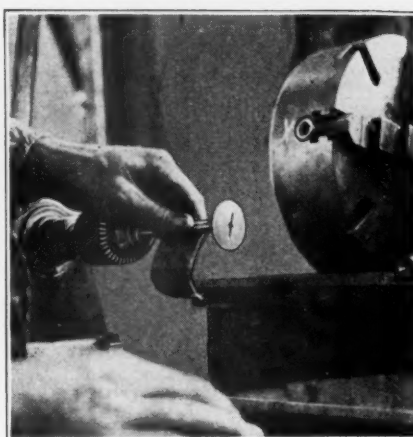
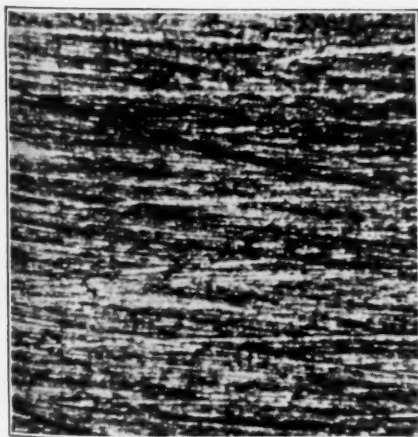


Fig. 1, left, shows scratches crosswise of a valve stem resulting from rotating valve in a lathe as in Fig. 2, in center. Fig. 3, at right, indicates the result of polishing the valve stem with emery cloth rubbed lengthwise of the stem. Stem surfaces are magnified 36 times

# Used Truck Campaign Boosts Sales for Weeks Afterward

*A Dealer Found That Sales Increased for a Long Period Following the Close of a Special Used Truck Sale*

THE effects of special effort put forth during a used truck sale reach a maximum after the period is over, according to the experience of an organization which conducted such a campaign.

The sale lasted for two weeks and despite the fact that it was well advertised the results at the time were distinctly disappointing, but later events showed clearly that the sale started interest on the part of prospects which continued and increased for several weeks following.

One of the most effective means of inducing used truck prospects to visit the salesroom was the mailing of post cards written in longhand by salesmen. The salesmen used assumed names in signing the cards and the messages all followed the same pattern although worded differently. A typical message follows:

"We have sold the truck we were talking about the other day, but we have another one of the same type which we believe will interest you.  
"John Beck."

There is no salesman in the establishment by the name of "Beck" and several prospects who were unable to recall any salesman by that name called at the salesroom and stated the fact. This was just what was desired. Another salesman explained the temporary absence of "Mr. Beck" and offered to show the prospect the used truck in question.

The postal cards were only one of many schemes of attracting attention to the used truck sale. Handbills were pasted on the windows of the salesroom at all sorts of angles and in unusual positions. Signs were posted in the stockroom and the service department. A special used truck message was mailed to every name on the used truck prospect list and copies were forwarded by mail to salesmen and office force. A parade of used trucks was staged through the business district. Each truck carried a large sign calling attention to the fact that it was a sample of trucks offered in the sale. A number of profitable inquiries resulted from the invitation on the sign to "ask the driver."

Prospects on the mailing list were followed up by telephone calls. Each was asked whether or not the circular had been received and was given a personal invitation to call during the sale. The telephone fol-

low-up proved very effective in bringing prospects to the sales floor.

The personnel of the establishment was not overlooked in preparing for the sale. The purpose of the campaign and the manner in which it was proposed to conduct it were explained to the salesmen in a series of meetings. A spirit of rivalry was set up by dividing the salesmen into two teams and a dinner to the winning team was offered as a prize. Individual prizes were also offered for salesmen making good records. As a further assurance that used truck sales would be

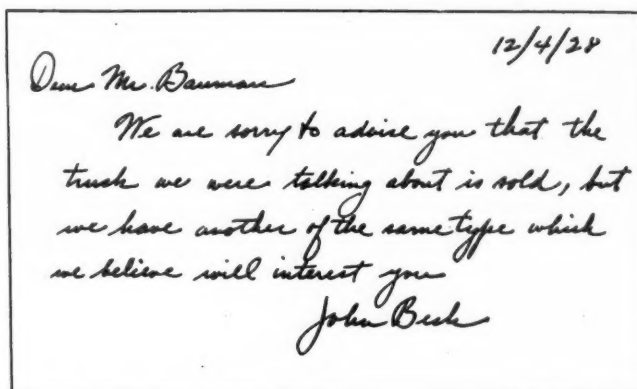
pushed, all salesmen were directed to devote one-half of their time to used truck sales during the two weeks' period.

Attendance at the opening week of the sale was small in comparison with the advertising, publicity and personal sales effort which it received. During the second week attendance increased and it mounted still higher in the third week after the sale was supposed to be over. In fact the management was surprised to find that interest which had been

aroused during two weeks of intensive sales work continued for quite a while thereafter. In fact, more than \$13,000 worth of used trucks were sold in one week more than a month after the conclusion of the sale.

The used truck sale was a special effort, but the problem of disposing of trade-ins is not overlooked at other times. The general policy is to create in the mind of the prospect the idea that the used truck is in every way a desirable piece of merchandise. No junk is ever offered by the used truck department. Prospects never see a dilapidated truck about the premises. Used trucks which are ready for sale are displayed at the front of the service floor directly in the rear of the main sales floor. Trucks which have been taken in trade and are not yet ready for delivery are kept in the rear of the service department.

All trade-ins are cleaned and usually are painted before being listed for sale. Trucks are put in condition for immediate use by purchasers and trucks of the make sold by the establishment are reconditioned and guaranteed. As an illustration of the pains taken to adapt used trucks to customers' needs it may be said that a new dump body and hoist was installed on a truck at a cost of \$600 and the job sold for \$3,200.



Post cards written in longhand by salesmen brought in prospects

# Month's *New* Trucks and Buses

## Delling

A STEAM powerplant is used in the bus developed by Delling Motors Co., Camden, N. J. The main units comprise a horizontal fire tube boiler under the hood and a three-cylinder double-acting horizontal engine mounted about amidship under the floor. The boiler uses cheap fuel, medium furnace oil, in both main and pilot burners.

The sponsors of this bus believe that steam propulsion is superior, at least under certain conditions of operation, such as frequent stop city service where acceleration is important and in mountainous territory where demand for power varies within wide limits.

Due to the fact that a steam engine can start under full load no clutch or transmission is used. Control devices are arranged substantially the same as on gas-electric bus. The throttle is controlled by a pedal under the left foot of the driver, while the right foot operates the service brake which acts on the rear wheels. Brakes are fitted also on the front wheels and these are applied by forward motion of a long lever at the driver's right. There is another lever on the left of the driver which controls the reverse action of the engine valve gear.

The powerplant comprises a horizon-

tal fire-tube boiler located under a hood at the front of the coach, with its axis in the fore-and-aft direction. This boiler has a shell of  $\frac{3}{8}$ -in. hammer-welded steel, with an inside diameter of 34 in. and a length of 26 in. and two headers, which are also  $\frac{3}{8}$  in. thick. The shell is wound with five layers of piano wire to provide the necessary radial strength. Six hundred and eighty-six copper fire tubes of  $\frac{5}{8}$  in. outside diameter extend through the boiler and are expanded into the headers. There are no tubes through the upper part of the boiler, which is normally filled with steam, hence the fire tubes are at all times submerged in water. There are reinforcements on the headers over the steam space, and a number of stay bolts pass through this part of the boiler. The headers are flanged and welded to the shell, and two reinforcing rings are then shrunk over the ends of the shell and welded to both the shell and the header. To the reinforcing ring at the forward end are welded two supporting brackets by which the boiler is supported on the chassis frame, while the rear end is supported by a cradle on a frame cross member in such a manner that it is free to expand longitudinally; it is held against bouncing on the frame by hold-down bolts.

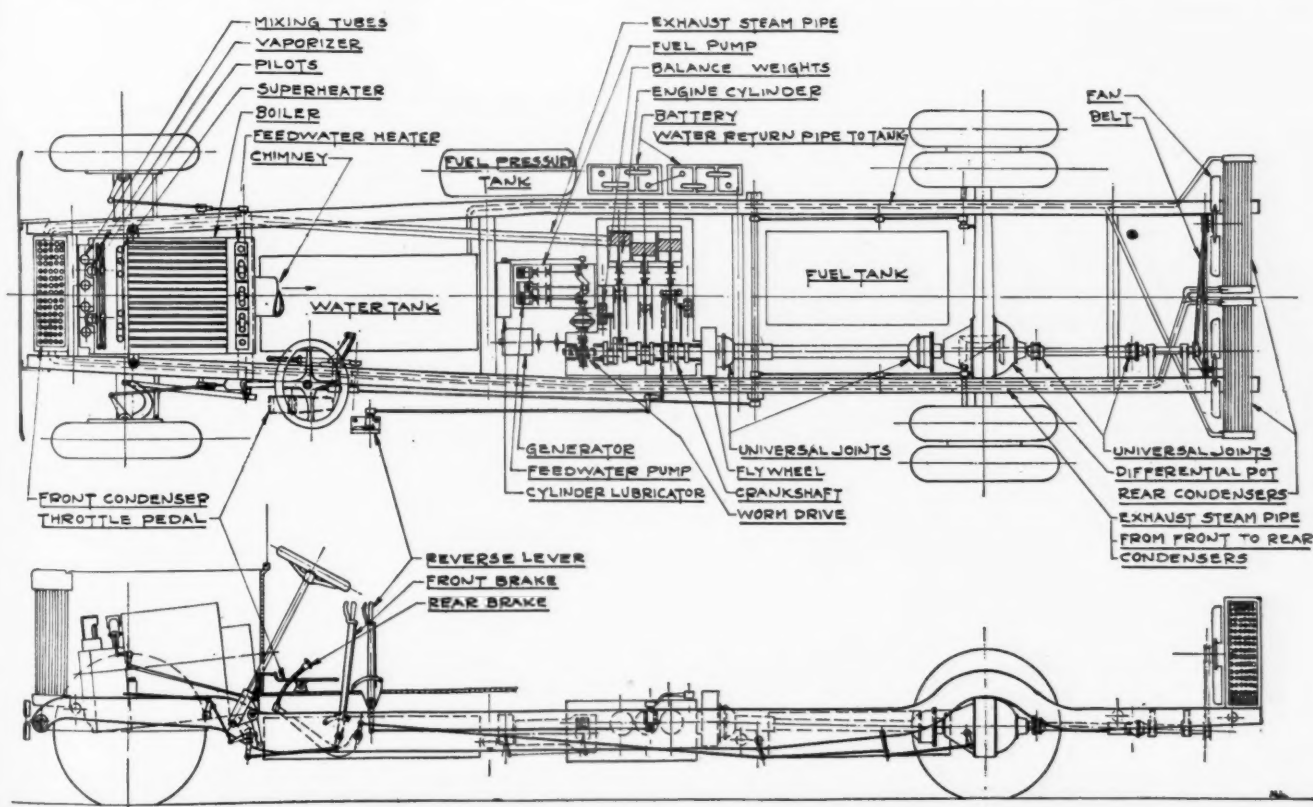
The outside of the boiler is covered

by an insulating lagging of millboard about  $\frac{3}{4}$  in. thick, and this in turn has a protective covering of sheet aluminum. Steam is carried at pressures of between 600 and 700 lb. p. sq. in.

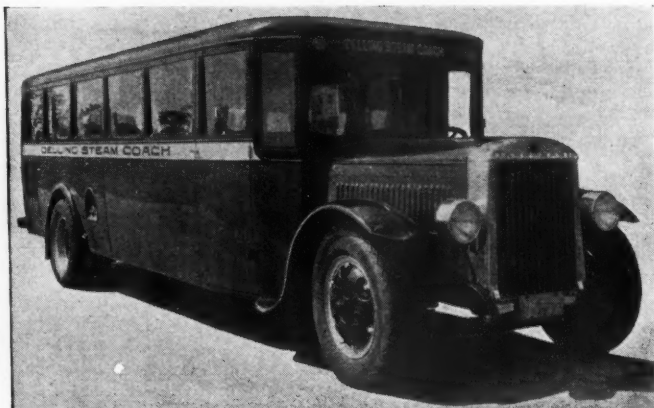
Steam is taken from the boiler through a dry pipe which extends longitudinally through the steam space and has a number of small holes drilled through its wall, so that no water can be carried along. It passes directly to the throttle valve, which is of a combination sleeve and poppet valve type.

The burner, which is of the vaporizing type, is located at the forward end of the boiler and is fully enclosed. The air required is drawn into the burner through 4 venturis by the vaporized fuel which is injected into them by the nozzles. The vaporizing element comprises two coils of stainless steel tubing.

The engine is a three-cylinder horizontal one, with a bore of  $4\frac{1}{4}$  and a stroke of  $4\frac{1}{4}$  in. It is a double-acting engine and works on the uniflow principle; that is, the piston when approaching the end of its stroke, uncovers a port in the cylinder wall through which most of the steam escapes. The remainder of the spent steam escapes through a piston valve at the end of the cylinder, which also controls steam admission. This valve is operated by means of a modified Walschart valve



Plan and elevation views of the new Delling steam bus, showing lay-out of units



**Delling steam bus.** A horizontal fire tube boiler is mounted under the hood and a three-cylinder double acting horizontal engine is mounted about midship under the floor

gear. The point of cut-off is varied automatically by means of a device controlled, through the intermediary of an oil pressure mechanism, by the speed of the engine. The engine being direct-gear to the vehicle, its speed is at all times proportional to the vehicle speed. Up to 8 m.p.h. the full cut-off is used; from this speed up to 20 m.p.h. the cut-off varies, while at above 20 m.p.h. the cut-off is a minimum.

The engine is arranged on the chassis frame with its crankshaft axis extending fore and aft, but located quite a distance to the left of the chassis axis.

Since the engine is double acting, each stroke of each piston is a power stroke and the uniformity of torque is about the same as obtained with a twelve-cylinder four-cycle internal combustion engine. Continuity of torque is therefore inherent in the design, but the torque naturally fluctuates, and to prevent this from becoming unpleasant at low speed, the engine is provided with a 12½-in. flywheel.

Various accessories are driven through a cross shaft which in turn is driven from the forward end of the crankshaft through worm gearing. These units include a triple piston pump for the fuel and feed water and the cylinder lubricator which is a Madison-Kipp ratchet operated type. An electric generator is furnished and is driven by gears from the eccentric shaft.

Of the three cylinders of the pump, one serves for the fuel feed and the other two for feed water. Feed to the boiler is controlled by two thermostats each controlling one cylinder of the pump. Of the upper connections of these thermostats to the boiler, one is 1 in. above the other, and the second control comes into action in case the supply from one pump cylinder is not enough to maintain the water level during heavy demands for steam.

Exhaust steam from the engine is led into a two-section condenser at the front of the bus. It enters one section at the bottom, passes to the top of it, then over to the other section and leaves the latter at the bottom. From this condenser the steam passes on to two condensers at the rear of the bus, each of which is provided with a fan. For driving these fans a short shaft is arranged in the rear of the differential housing, coaxial with the driving bevel

pinion and driven from the bevel ring gear. This shaft carries a double pulley from which the two fans are driven by belts.

From these rear condensers there is a return to the water tank, at the inlet to which there is a separator.

Boiler pressure is regulated by means of a diaphragm valve, which shuts off the fuel flow to the main burner when the boiler pressure exceeds a certain value.

The bus to which the above description applies has a wheelbase of 230 in., and a tread of 73¾ in. at the front, and 76 9/16 in. at the rear. The weight of the complete bus ready for the road is 18,000 lb., of which the 27-passenger body weighs 6500 lb. It is hoped to considerably reduce the weight of the body in later designs.

In a demonstration run in the neighborhood of Philadelphia the bus proved to be very smooth-running and comfortable and to have rapid acceleration and abundant power on hills.

The makers claim the following advantages for their coach, as compared with the conventional internal combustion type; use of cheap fuel, costing from 5 to 6 cents per gal. with practically the same mileage per gal. as a gas-electric; better acceleration, 20 m.p.h. in 8 seconds from standing start; longer life of engine; better hill climbing ability; greater flexibility; ease of operation and comfort equal to a gas-electric; steam heat available without complications.

## Ward LaFrance

THE Ward LaFrance Truck Corp., Elmira, N. Y., recently announced the introduction of a new two-ton truck chassis equipped with a six-cylinder en-

**Model 2R6 two-ton Ward LaFrance.** It is offered in three wheelbases and is equipped with a six-cylinder engine, four-speed transmission and four-wheel hydraulic brakes

gine, four-speed transmission and Lockheed four-wheel hydraulic brakes. Designated as the Model 2R6, this new unit has been designed with the lines, equipment and finish of a passenger car, but with heavy duty truck construction of chassis. It is offered in three wheelbases, namely: 161¼, 176½, and 191½ in. for 10, 12 and 14 ft. bodies.

The 3¼ x 4½ in. six-cylinder engine develops 65 hp. at 2200 r.p.m. It is equipped with an oil filter and an air cleaner and is suspended by rubber shackles at three points. Mounted in unit with the engine is a multiple dry disk clutch and four-speed transmission. Final drive is through a Timken bevel type rear axle with a standard gear ratio of 5 6/7 to 1.

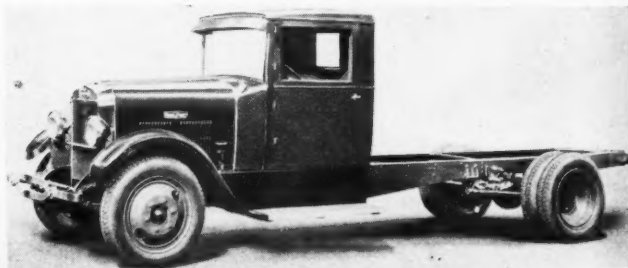
Service braking is provided by a Lockheed hydraulic system. The hand brake actuates shoes on a drum mounted behind the transmission. Steering is through Ross cam and lever gear. The walnut-finished steering wheel is equipped with a sunken spark control, lighting control and horn button.

Four semi-elliptic springs support the frame, which is of six-inch channel, reinforced with gusset plates. Budd disk wheels equipped with 32 x 6 in. pneumatics front and 32 x 6 in. dual, rear.

The radiator has a pressed steel chromium plated shell and the cowl is designed to conform with the radiator, providing unbroken lines from radiator to back of cab. The cowl is separate from cab for application of vestibule cabs, etc., and is equipped with chromium plated molding and cowl lamps. The cab is of the sedan type with curved lines in both horizontal and vertical planes. Doors are full height and hinged at four points.

Standard equipment includes electric lighting, heater, spare wheel, Stop-Lite, front bumper, chromium plated instrument board equipped with ignition switch and choke, panel under glass equipped with speedometer, ammeter, oil gage, heat meter, and gasoline gage, chromium plated head lamps with double filament bulbs.

**TWO** fleet operators have saved the cost of a set of seat cushions per truck per year by changing the gasoline tank filler opening so that the tanks can be filled without removing the cushions. The importance of this detail of cab or body design was stressed by Mr. John Walker, of Mack, who spoke at a recent meeting of the Metropolitan Section S.A.E. on the subject of Commercial Body Design.



### Truck Model Purolator

Motor Improvements, Inc.

365 Frelinghuysen Ave., Newark, N. J.

THE type B Purolator which is designed for use on truck and bus engines embodies a filter element of the same material as that used in the passenger car types. This element is made of cloth woven of hard cotton thread and a long closely picked nap is raised on the surface of the cloth.



Oil entering the Purolator surrounds the filter element and is forced through it, leaving a deposit of dirt on the filter surface. This deposit of dirt serves as a further filter for the succeeding flow of oil. A relief valve is provided to prevent excessive pressure in case the filter element becomes

completely clogged. The filter element can be removed by loosening a nut on the top of the shell and lifting the shell off.

### Motor Reconditioning Set

Fleming Machine Co., Worcester, Mass.

WHILE obtainable separately the precision tools produced by this company are now supplied in boxed sets to meet varying requirements of automotive mechanics. The motor reconditioning set for checking up cylinder jobs, fitting pistons,

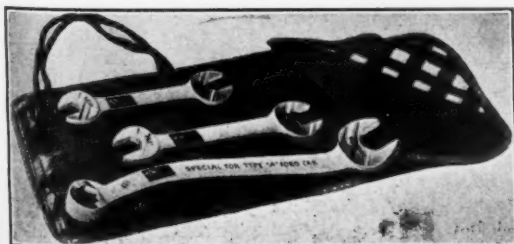


piston rings, etc., consists of a 2½-5½ in. range cylinder gage; two to four inch outside micrometer set; two to five inch inside micrometer set; and nine inch thickness gage, consisting of eight blades ranging from .002 to .053 in. The list price is \$35.

### Bonney Wrench for Model A

Bonney Forge & Tool Works  
Allentown, Pa.

A SPECIAL set of 3 Chrome vanadium wrenches has been placed on the market by the above concern for use in connection with the new Ford Model A. It consists of a 10-in. wrench with box opening at one end for cylinder head nuts

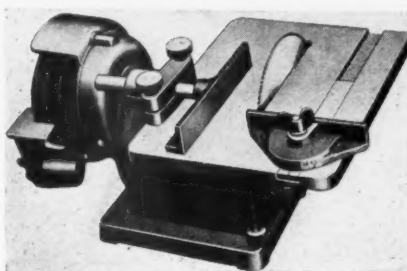


and with a 1½ in. opening on the other to fit spark plugs. The two smaller double end wrenches are designed to fit practically every other nut or bolt on the car. The set, designated as No. 11, lists at \$3.25 with case and \$2.75 without.

### B. & D. Saw Table

Black & Decker Mfg. Co.  
Towson, Md.

THIS table was designed for use in connection with the Black & Decker electric combination grinder. On it work can

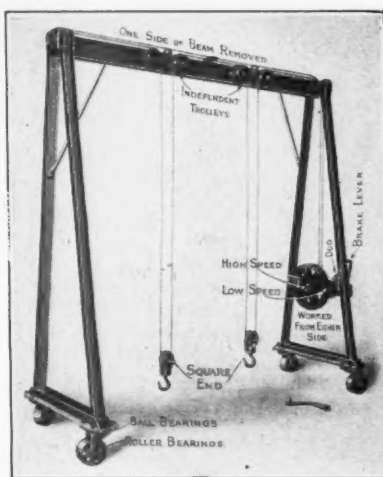


be sawed on any angle up to 45 degrees and up to 1½ in. in thickness. Adjustment is provided for raising or lowering table. The combination may also be used for sawing aluminum, brass, copper, bakelite, fibre, etc.

### Portable Crane

Bradley Machine Co., Inc.  
Middletown, N. Y.

THE steel frame portable cranes made by this company embody a hoist mechanism comprising a hand-operated geared winch, cable pulleys and either single or double lifting blocks. In the double block model illustrated the trolleys may move independently or together and one or both hooks may be used at a time. One side of the beam is removed to show assembly. The winch may be operated from



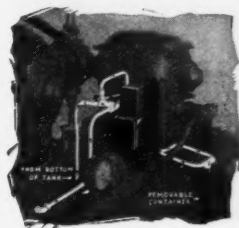
either side and high or low speed is obtained by placing the handle in corresponding positions shown. Loads are held by a double dog and may be lowered by a brake. Casters have roller bearings in the wheels and ball bearings in the top to permit easy handling.

Cranes are made in two standard capacities, one and two tons, and either may be had with single or double blocks. Extended beam and other special types are also made.

### Eco-Matic Tank Drainer

Service Station Equipment Co.  
Bryan, Ohio

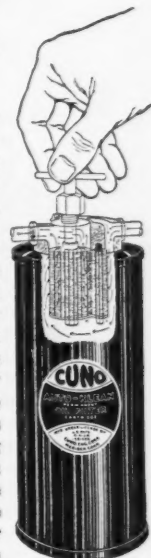
THIS device, which is being supplied with the air compressors made by the above company at no increase in price, prevents the accumulation of moisture in air tanks. It functions by utilizing the air pressure released from the condensation chamber in the compressor base so as to momentarily open a valve connected to the lowest point in the compressor tank, thereby ejecting water and oil from the tank each time the compressor stops. Among the advantages claimed are elimination of clogged or frozen air lines, prevention of oil and moisture from getting into tires, protection of the mechanism of automatic air inflators from freezing or clogging and the assurance of dry air for paint spraying or other purposes.



### Cuno Auto-Klean Oil Filter

The Cuno Engineering Corp.  
Meriden, Conn.

THIS unit, which may be installed on any engine by inserting at any convenient point in the oil pipe line, is made entirely of metal. Oil is filtered through metal disks having fine spaces between and assembled on a cartridge which may be rotated by a handle at the top. Cleaning blades mounted on a stationary post are of the same thickness as the spaces between the filtering disks. One complete turn of the handle causes the cleaning blades to scrape any foreign matter clear of the cartridge which settles to the bottom of the cartridge. A by-pass is provided which operates in case the oil pressure exceeds the safety point. Price for all models of vehicles, \$5.50.



### Rim Tool

Cleveland Welding Company, Cleveland

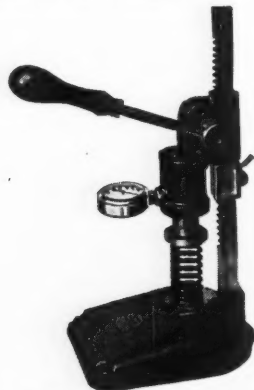
THIS tool, which is part of the wrench used for removing rim nuts, is all that is necessary to collapse a ClevWeld No. 25 rim preparatory to removing the casing.



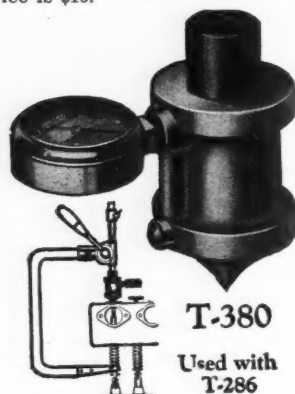
The tip of the tool is inserted into the lock scrip and a twist of the wrist to the left collapses the rim, without the use of irons.

**Valve Spring Tester**Stevens Walden-Worcester, Inc.  
Worcester, Mass.

**T**WO devices for testing springs in and out of the engine are being offered by the above company. Their use shows up faulty valve springs and gives readings in pound spring pressure at the maximum spring compression. Model T-370 consists of a platform, compression chamber,



breathing gage, operating lever and rack. To operate a spring is placed on the platform and compressed by the lever. A clamp on the rack of the tester is set so that the spring will be compressed the same amount as by the camshaft in the engine. The price is \$15.



Model T-380 is designed for use in connection with the Stevens valve spring lifter and tests the springs right in the block. This model fits between the rack of the lifter and the top of the valve. To test a certain spring it is only necessary to compress it the maximum amount that it is raised by the camshaft. The price is \$8.50.

**Truck and Bus Battery**Vesta Battery Corp.  
Chicago

**T**HE above company recently announced the bringing out of a heavy-duty truck and bus battery which incorporates the plate-locking construction characterizing its other batteries. The Isolator, which is



the term employed to describe this feature, is a hard rubber bar placed at top and bottom of each side of each cell group. The battery plates fit into notches equally spaced in this bar. By holding the plates firmly in place the maker claims that the possibility of buckling is minimized.

**Honing Waste Receiver Set**The Hall Mfg. Co.  
Toledo, Ohio

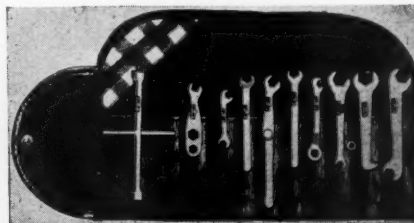
**T**HE Hall-Toledo waste receiving set for catching honing waste of stone grit and metal particles, consists of five cups. These cups cover all diameters of cylinders up to four inches and fit under the bottom of the cylinder. They are held rigidly in position by a V-block which fits over the crank-pin. Stud points of various lengths



are furnished which fit between a boss in base of cup and the V-block. Adjustable by set-screw these studs lock the cup into position. A flexible tube in bottom of cup carries waste material out of the engine into a receptacle. This device with full equipment is listed at \$7.50.

**Bonney Ignition Wrenches**Bonney Forge & Tool Works  
Allentown, Pa.

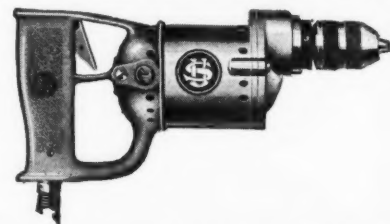
**J**UST announced by the above company, this new set of ignition wrenches, known as ignition set No. 18, contains ten wrenches for use on ignition work on elec-



trical systems, such as Auto-Lite, Bosch, Delco, Eisemann, North East, Remy, Splitdorf, Westinghouse, etc. These wrenches are made of CB chrome vanadium steel and are of thin and light construction.

**U. S. 1/4-In. Drill**United States Electrical Tool Co.  
Cincinnati, Ohio

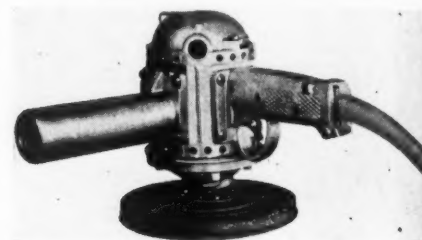
**T**HE above company has placed on the market two high speed, light weight, 1/4 in. portable electric drills. One of these, known as the Special Direct Drive Drill, operates direct on the armature shaft at



a speed of 10,000 r.p.m. and weighs four pounds. The other, known as the Special Gear Reduction Drill, operates at 2000 r.p.m. and is 1/4 lb. heavier than the other model. A new feature of these drills is their keyless chucks. Both drills embody universal motors that operate on A.C. or D.C. current. The list prices are \$25 and \$28.

**B & D Electric Sander**Black & Decker Mfg. Co.  
Towson, Md.

**T**HIS device designed for smoothing surfaces consists of a sand pad which is electrically driven by a motor through a train of steel gears running in an oil-tight compartment. The motor and all revolving shafts are mounted on ball bearings, and



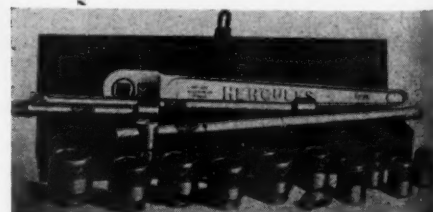
the sander is operated by a trigger switch controlled from a pistol grip.

**Alltraffic Brake Lining**Durwyllan Co., Inc.  
Paterson, N. J.

**T**HIS new lining material now being marketed by the above company is subjected to a special curing process that is said to make the lining more resistant to wear, oil, water and grease. The lining is of leather-like appearance and it is claimed to retain its appearance and physical properties even when worn down thin.

**Bonney-Hercules Socket Set**Bonney Forge & Tool Works,  
Allentown, Pa.

**T**HIS new heavy duty set of socket wrenches recently announced by the above company was specially designed for hard service. The set is composed of 10 sockets, ranging from 15/16 to 1 1/8 in. openings, ratchet handle and a short and long extension sliding "T" handle. Packed in a black enameled case, it lists at \$34.

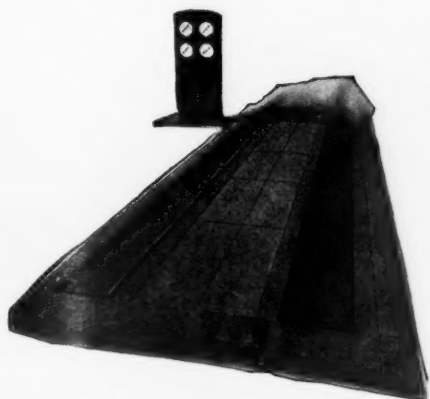


### Road Test Brake Indicator

Taylor Mfg. Corp.

1114 S. Olive St., Los Angeles, Cal.

NO power is required for the operation of this device and it can be installed as an integral part of a driveway or a lubrication and inspection pit. To test brakes on a vehicle it is driven over the indicator as on a floor and the brakes are applied. Resistance of each brake is indicated by pressure shown on a gage which is connected with a hydraulic system. As the vehicle moves forward with the brakes



applied the wheels tend to drag the platform along in the direction of motion of the vehicle. This drag sets up pressure in the hydraulic system. Either two or four-wheel brake vehicles may be tested. Each vehicle entering a building may be tested without driving out of its way by the indicator if it is installed in the driveway. Price of the standard model is \$495.

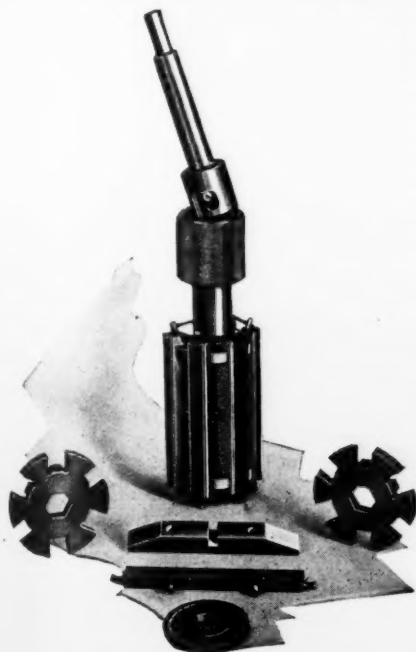
### Cylinder Hone

Jeschke Tool Corp.

14220 Mack Ave., Detroit

THE essential features of this hone are simple and rigid construction, expansion adjustable during operation, provision for an automatic stop, and full-floating construction. Only one set of stones and two sets of flanges are needed to cover the entire range of cylinder sizes. Two sets of stones are furnished, one for roughing and one for finishing.

The hone can be used with any 5/8 in. heavy hand drill. Best results are obtained



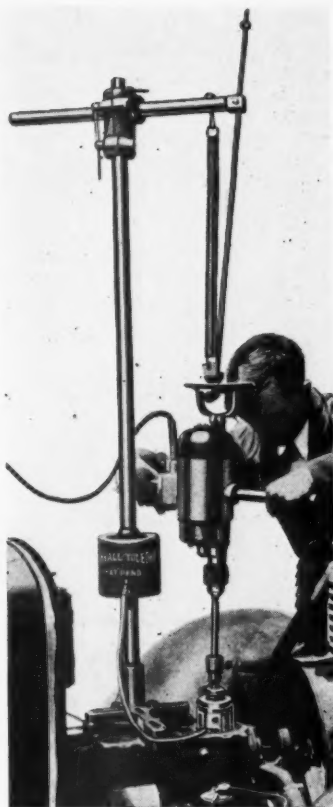
by mounting the drill on a drill stand. Such a drill stand is offered by Jeschke also, mounting on the cylinder block without removal from the chassis.

### Hall-Toledo Honing Stand

The Hall Mfg. Co.

Toledo, Ohio

THIS device, which lists at \$20, can be used either for honing in the chassis or with the Hall-Toledo Floor Base. The equipment for honing in the chassis consists of a vertical bar, bolted to the block at the base and supporting a cross-bar at the top adjustable at any angle to the base, a heavy coil spring from which the drill is suspended and a stop bar arranged parallel to the spring. The stop bar



is equipped with two adjustable nuts to prevent the hone from passing beyond the desired point on either up or down stroke. A removable, non-splash container is mounted on the vertical bar from which lubricant is fed to the hone through a flexible tube. For work out of the chassis a heavy casting stand 36 x 20 in. and 13 1/2 in. high, weighing 150 lb. is furnished. The floor base has a petcock for draining off lubricant and is sold without equipment at \$40.

### Underbody Capstan Winch

Silent Hoist Winch & Crane Co.  
Brooklyn

A WINCH for mounting either under the driver's cab or body has been added to the above company's line of power winches. It is designated as the Model K and is operated through a power take-off. Worm gear driven, the winch is self locking. The worm is nickel steel and mounted on SKF thrust ball bearings. It has a capacity of 2500 lb. on a single line. This winch is also supplied with two heads, one for each side of the truck and in a larger capacity of 5000 lb.

### Branick Tire Spreader

Branick Vulcanizing Co.

Fargo, N. D.

THIS spreader, which is pneumatic operated, weighs 105 lb. and is designed for attaching to wall or post. It accommodates tires from three to 10 inches with bead diameters of 18 to 25 in. A slight pressure on the foot pedal causes the bead



grips to engage the tire and a twist on the air valve causes the spread in cylinder to slide out. The operation requires only a few seconds. The open casing can be readily revolved in either direction by a slight touch. Price \$115.

### Tru-way Valve Reseater

Milwaukee Motor Products, Inc.

Milwaukee, Wis.

A STATIONARY self-centering pilot is incorporated in the Tru-way valve reseater. At the upper point of engagement with the valve stem guide the pilot is tapered and at the lower end which is split is expanded by a tapered core to a tight fit with the guide bore. Once in place the pilot is not removed for roughing, narrowing or finishing.

During finishing a special feed and lock nut assembly is employed. The cutter is placed in position and feed of .005 in. is set by a lock. The cutter is then turned until it revolves freely and smoothly on its seat. The lock prevents upward motion of the cutter when a hard spot in seat is struck.

A complete reseating outfit comprising three pilots, 5/16, 11/32 and 3/8 in., 4 cutter arbors, arbor wrench and feed and lock nut assembly is furnished at list price of \$22.50. Each pilot has an expansion range of .035 in. Single pilot sets are listed at \$12.00 and pilots alone at \$5.30.



### Dot Little Giant Grease Pump

Dot Lubrication Division  
Cambridge, Mass.

**D**ESIGNED for the small fleet and garage having need for greasing equipment between the hand gun of a pound or two capacity and the large tank of 20 to 50 lb., this one-man-operated grease pump is of 5-lb. capacity and develops 10,000-lb. pressure at the nozzle. It is equipped with Alemite, Zerk and Dot nozzles and weighs



23 lb. filled. The pump is mounted on a hardwood foot plate and the pump unit swivels in the grease tank so that the handle may be worked at any angle to the base without changing the position of the pump. To open for filling swing the pump handle opposite the locking rod and draw the pump unit through the top of the grease tank by gripping the spade handle and then turn pump handle to right or left to lock unit into place. Loosen locking rod and drop it forward and swing pump head over on hinge to resting position. The entire reservoir is then open for filling. The price of the pump is \$47.50.

### Ticket Printing Register

Ohmer Fare Register Co.  
Dayton, Ohio

**I**NVENTED by John F. Ohmer of the above company, this new device is a ticket printing register for operation in a



bus or car by the conductor. It prints a ticket for any point on the route traversed by the bus in a few seconds while the purchaser waits. The ticket shows the date, start, and destination of the passenger, the amount paid, the number of the ticket, its class and the name of the company. The machine makes a record of each ticket issued and each fare collected and total sales can be struck off at any time. The inventor claims that the machine is tamperproof, and will print 200,000 tickets and records without re-inking. The passenger purchasing a ticket sees exactly what the operator is about to register. The amount of the fare is shown on visible indicators for the verification of the passenger. This machine is designed to discourage the "rake-off" and tends to keep the money in the till of the company.

### Universal Wheel Puller

Kent-Moore Organization  
Detroit

**T**HE set consists of a main puller with a heavy-headed 1 1/4-in. screw and three sturdy allow fingers and contracting rings in sizes to fit the hubs of all makes of vehicles. After the ring is



threaded on the wheel hub and clamped the puller fingers are engaged in recesses in the ring. The shock of a blow applied to the head, in exceptional cases, is absorbed by the fingers and not the wheel hub. The rings, made of special heat-treated steel forgings, serve as an additional purpose in that they are machined so as to form a thread chaser for crossed or marred threads.

### Gettelman Hi-Speed Plow

Hell Co.  
Milwaukee, Wis.

**T**HE Gettelman Hi-Speed Snow Plow, manufactured by the above company, is designed to meet various snow conditions on highways. Adjustments are provided to throw snow to either side of the road, or for carrying the blade squarely across the front.

Any truck of two tons capacity or larger can handle a Gettelman snow plow at 20 to 35 m.p.h. depending on the depth and condition of the snow. Snow that weighs 45 lbs. per cubic foot is considered wet snow.

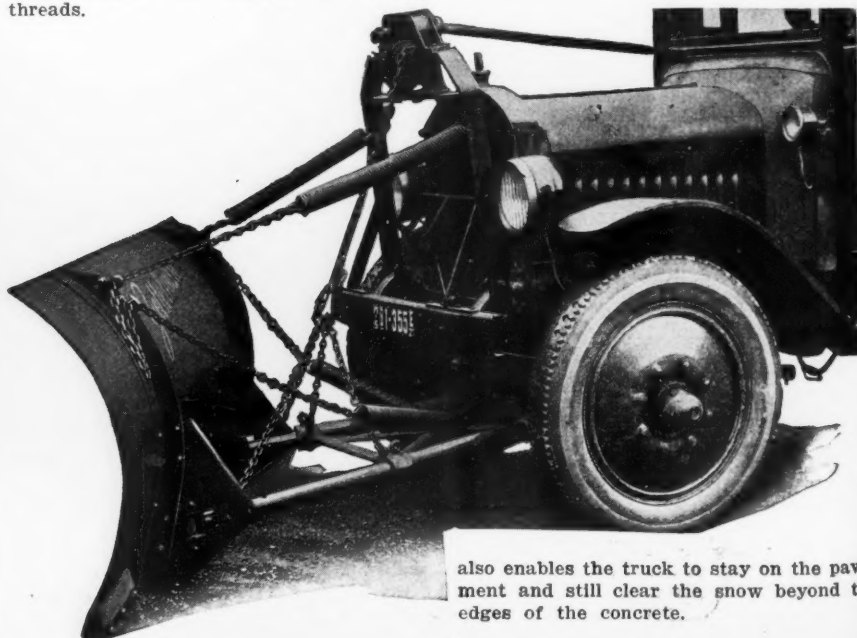
The plow is made in 9 ft. lengths for 1 1/2 to 2 1/2-ton trucks and in 10 ft. lengths for 3-ton trucks and larger. All blades are 33 in. high.

Steel plate 3/16 in. thick is used for the blade. The cutting edge is made of high carbon steel and the blade is reversible, doubling the life of the plow. The blade supporting arrangement is sturdy and tension springs are easily adjusted to plowing conditions. All castings are electric steel, annealed and machined. The cab control mechanism, for raising and lowering the plow blade, is light but sturdy in construction, and easily raises the plow to a carrying position.

There are three possible positions for the blade. Telescopic push arms permit quick adjustment of the blade to throw the snow to either side of the road, or the blade may be adjusted squarely across the front of the truck for bulldozing snow at street intersections or other wide areas.

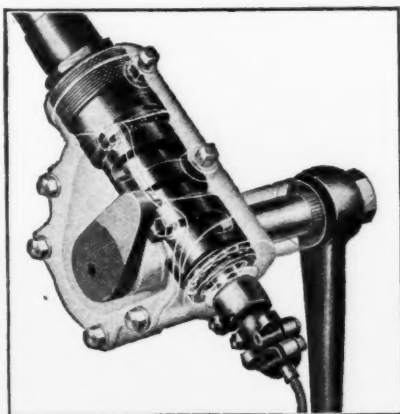
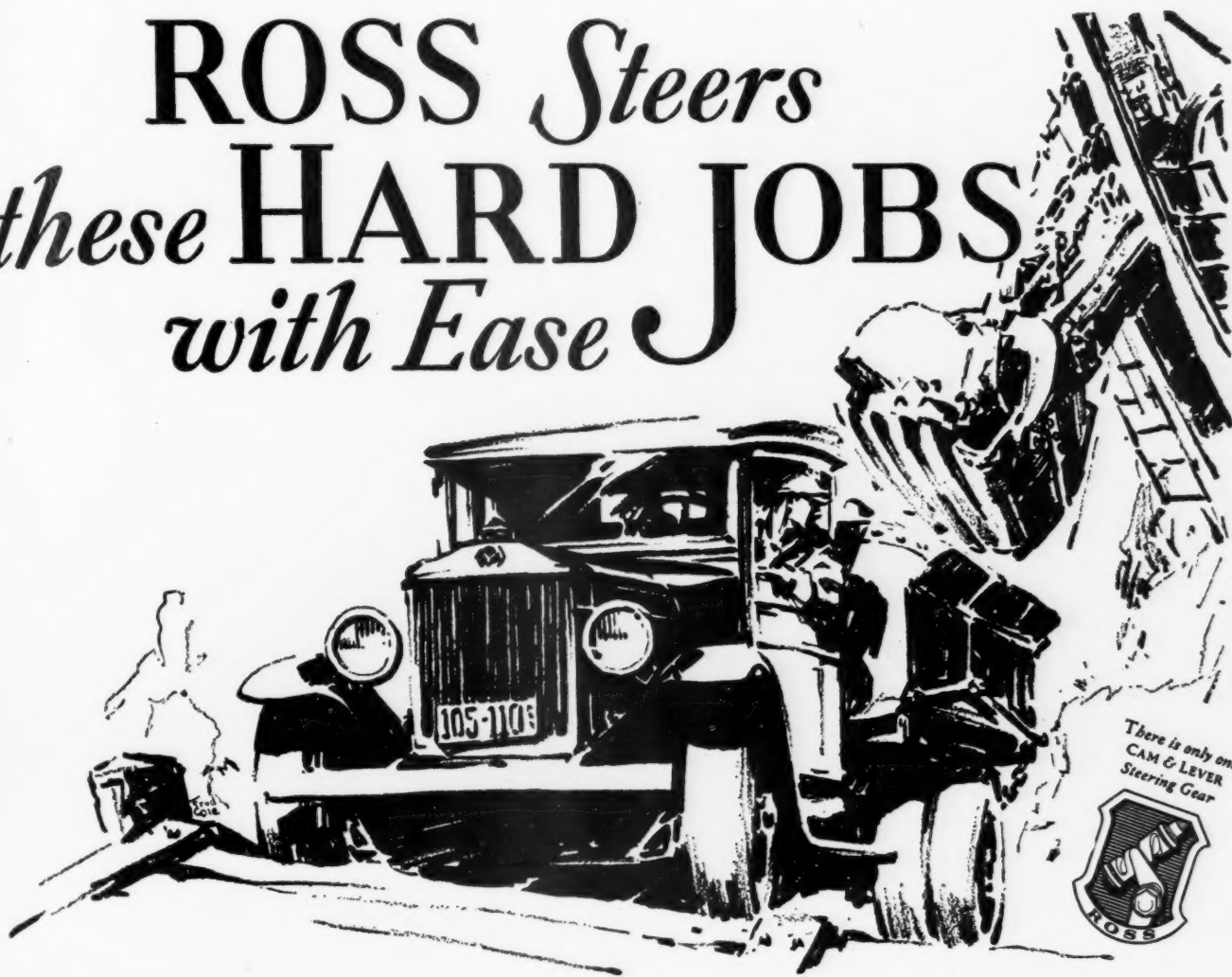
One of the features of the plow is the tripping action of the blade which protects it against damage from any obstructions it might hit. The blade is pivoted to the push arms so it can tilt forward. The tension springs and the counter-balancing effect of the snow bring the blade back to the scraping position. The deeper the snow the more it helps to return the blade to the operating position because the pivoting point is below the depth of the snow against the blade.

Another feature is the offset of the blade in respect to the truck. The discharge edge extends a foot beyond the truck wheels. Thus the pressure of the snow on the offset portion of the blade tends to make the truck nose into the snow rather than pull away from it. This construction



also enables the truck to stay on the pavement and still clear the snow beyond the edges of the concrete.

# ROSS *Steers* *these* HARD JOBS *with Ease*



The balanced qualities of Ross Steering are largely the result of these features in which the Ross Cam and Lever Steering Gear differs from the ordinary type of steering gear:

- Variable Ratio of Cam
- Line Contact Between Actuating and Actuated Members
- Low Internal Pressures
- Powerful Internal Leverage
- High Over-All Efficiency

**S**TEERING heavily loaded trucks up makeshift ramps and down precipitous inclines *looks* like a *hard* job. It *is* a hard job. But as a matter of fact it is made comparatively *easy*—with Ross Cam and Lever Steering. The cam-and-lever principle, exclusive with Ross, gives complete and constant steering control under the most difficult conditions. A truck or bus equipped with Ross is safer and surer—less liable to jams and accidents. That—together with the far lower maintenance expense—is why the great majority of truck and bus manufacturers have adopted Ross Cam and Lever Steering Gear as standard equipment . . . Let us tell you more about the Ross.

ROSS GEAR & TOOL CO. • Lafayette, Indiana

# ROSS *Cam AND Lever* STEERING

# Have You Heard That ~



**E**XCEPT in a few scattered localities, the general retail situation in the truck field is good, according to reports received from leading centers. The Atlanta report states that both light and heavy truck sales were again active during November and, as has been the case every month this year, showed a gain over the same month last year. The whole motor truck volume will show an excellent gain over 1927 with nearly all dealers in the Georgia section, according to the report. New Orleans dealers believe that a marked improvement in business will come with the new year, partly on account of large sums of money to be expended in the rehabilitation of the flooded areas. General business conditions in Milwaukee are reported as active. Kansas City reports that truck sales throughout the territory during the month of November was well ahead of the corresponding month of 1927. The report states that while sales of the heavy classifications have dropped, active movement of light models has more than made up the difference. Truck sales in the Dallas section are reported to be about the same as the previous month, with greatest activity in the rural district. Denver reports that a lack of demand for beet trucks this year is reflected in the depressed market for light trucks throughout this region. Car and truck sales in northern California for November show an increase of more than 60 per cent over November, 1927, but a decrease of about 12 per cent from the record of October, 1928. A slight improvement in the truck market is indicated in the Los Angeles report. Truck sales in the Seattle territory for 1928 are on a par with sales for the corresponding period of 1927.

George W. Atterbury, founder of the Atterbury Motor Car Co., Buffalo, died last month at his ranch near Woodland, Cal., after a long illness. Mr. Atterbury established the Atterbury Co. in 1903, serving as its president until his retirement a few years ago. Originally he built electric-powered vehicles, later changing to gasoline. Atterbury trucks were among the first to use worm drive gear axles.

**T**HE automotive parts and accessory business is enjoying the greatest fourth quarter the industry has ever had and will close 1928 with new high records in production of sales, according to the Motor & Accessory Manufacturers Association. In October, suppliers of original equipment to vehicle makers and replacement parts and garage equipment to the trade, according to the association, did virtually the same heavy volume of business that they had in September and during the first half of November maintained operations only a little below the October level.



Vernon B. King has been promoted to the position of export service manager of the White Motor Company. Mr. King, who was formerly service manager at Toronto, Ont., started with the White company in the 1926 technical apprentice class. He is a graduate of the University of Toronto.

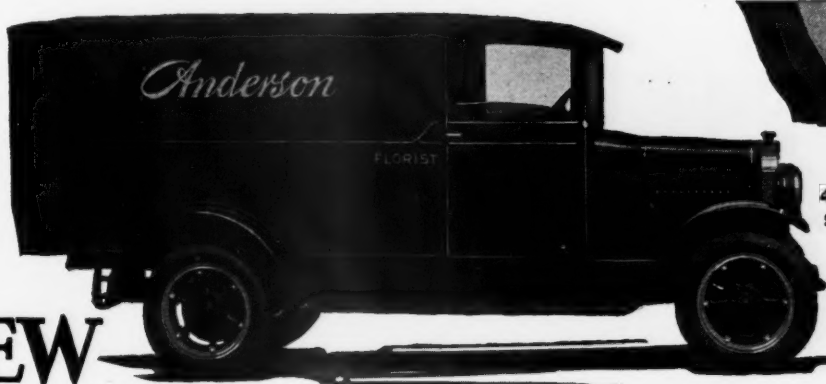
**T**HIRTY-FIVE representatives of motor freight lines in Texas met in Dallas recently and formed a state organization for the purpose of protecting themselves and shippers against irresponsible motor freight line operators. It was declared at the conference that many persons are operating freight trucks who are financially irresponsible and carry no insurance or bonds to protect the shippers and the public. The new organization will attempt to furnish protection to all concerns through bonds and liability insurance and seek to have motor freight operators placed under the supervision of the railroad commission. D. C. Sanders of Dallas was elected president; H. R. Strickland, vice-president; George L. Johnson, secretary, and W. M. Edwards, treasurer.

C. C. Coddington, president of the National Automobile Dealers' Association, died Dec. 2 at Morehead City, N. C., of heart disease, while on a hunting trip. Mr. Coddington was elected to the presidency of the dealer organization last February. A native of New Jersey, he has been a Buick distributor in Charlotte, N. C., since 1909 under the name of C. C. Coddington, Inc.

**E**QUIPMENT for Motor Truck Co., Inc., whose membership is made up of manufacturers and distributors of bodies and equipment for motor truck chassis, will meet in Cleveland, January 15th at the Hotel Winton, during the week of the Good Roads show. Companies in the body and equipment business are invited to attend and are also eligible for membership. It is the aim of this association to bring about a friendly and mutual cooperation between the concerns engaged in the equipment industry, and to work out a sound and cooperative policy, between the equipment industry and the truck chassis manufacturers and their distributors, thereby promoting and furthering the cause of transportation by motor truck. At the fourth annual meeting of the association which was held at Buffalo in September, the following officers and directors were elected: President, C. F. Tiers, The Schnabel Co., Pittsburgh, Pa.; First Vice-President, V. L. Farnsworth, Hydraulic Hoist Mfg. Co., St. Paul, Minn.; Second Vice-President, J. H. Press, Jacob Press' Sons, Chicago, Ill.; Secretary, G. M. Bunn, 6902 Cedar Park Ave., Philadelphia, Pa.; Treasurer, E. R. Boeck, Truck Equipment Co., Inc., Buffalo, N. Y.

C. E. Eldridge, general sales manager of Reo Motor Car Co., announced the following appointments: J. H. Lemons has been appointed sales manager for the western division; E. G. Poxson has been made sales manager of the eastern division, and L. T. Moore has been advanced to position of sales manager of the New England division. The three positions are newly created.

**M**ASSACHUSETTS' new compulsory automobile liability insurance rates were announced recently by Acting Insurance Commissioner Linnell. While the new rates show a substantial increase over the old rates they are lower than the tentative rates put forth by former Commissioner Monk. With the exception of the Boston territory, commercial car rates also show an increase. In a statement accompanying the new schedule Mr. Linnell said that the figures last obtained from the insurance companies indicated that the amounts actually paid in claims were lower than the amounts that had been estimated. Believing that this difference should not be allowed for selling costs where the purchase of insurance is compulsory, Mr. Linnell reduced the percentage to cover selling cost from 15 to 10 per cent.



**1 Ton**  
**6 Cylinder**  
**4 Wheel Brakes**  
**\$995 Chassis**

# The NEW STEWARTS

## are the outstanding value of truckdom

**OUTSTANDING** in that they embody all the latest known worthwhile mechanical improvements known to the industry \* \* \* outstanding in their performance records, Stewarts have earned a world wide reputation as "America's Greatest Truck Value."

For smooth riding, easy steering and freedom from unnecessary repair bills, they stand at the top of all truckdom. Men who know the industry from A to Z will tell you that, measured in miles and years of service, Stewarts cost less to buy and operate.

### Built to Last 5 Years or More

Stewart owners do not figure depreciation on a 2 or 3 year basis. They know by experience that the average life of a Stewart is 5 years or more. Many Stewarts have given their owners 8, 10 and 12 years of continuous service.

### Stewart Sales Are Increasing

Stewart sales in 1926 were 41% greater than in 1925 and in 1927 44% over 1926. Sales for 1928 to date are 48% over 1927. These figures represent world wide recognition of Stewart value.

The man who cannot afford to buy new trucks every year nor pay constant repair bills on old ones marks himself a Stewart prospect from the start. Write for free catalogs.

**STEWART MOTOR CORPORATION**  
**BUFFALO, N. Y.**

Export Branch: 1 BROADWAY (Dept. 3) NEW YORK CITY  
Cable Address: Stewartruk, New York. Code—Bentley

# Stewart

  
MOTOR TRUCKS

Models	
<b>¾ Ton</b>	
6 Cylinder . . .	\$895 Chassis
<b>1 Ton</b>	
6 Cylinder . . .	\$995 Chassis
<b>1¼ Ton</b>	
4 or 6 Cylinder . . .	\$1295 Chassis
<b>1½ Ton</b>	
4 or 6 Cylinder . . .	\$1645 Chassis
<b>2 Ton</b>	
4 or 6 Cylinder . . .	\$1975 Chassis
Worm Axle . . .	\$2095 Chassis
<b>2½ Ton</b>	
6 Cylinder . . .	\$2490 Chassis
<b>3 Ton</b>	
6 Cylinder . . .	\$3490 Chassis
<b>4 Ton</b>	
6 Cylinder . . .	\$4200 Chassis

All prices f.o.b. Buffalo

**3 Ton**  
**6 Cylinder**  
**4 Wheel Brakes**  
**Pneumatic Tires Extra**  
**\$3490 Chassis**



## Stewart Trucks have won—By costing less to run

**T**HAT there is no panacea for brake ills but that better directed efforts on the part of all who have to do with brakes would greatly increase their operating adequacy was the consensus of the engineers and service men who attended the November meeting of the Pennsylvania Section, Society of Automotive Engineers.

The first paper of the evening, by P. M. Heldt, engineering editor, *Automotive Industries*, reviewed the problems which were presented by the adoption of four-wheel brakes. The major problem, of course, was to apply braking effort to the front wheels without interfering with the steering action and Mr. Heldt reviewed the various methods employed to accomplish this successfully.

According to tests made by the Bureau of Standards and reported by H. H. Allen of the Bureau, most four-wheel brakes are adequate if properly adjusted and regulated. Mr. Allen pointed out that these tests, where two-wheel brake vehicles were in greater numbers, indicated that in most cases the care of brakes and not their design was responsible for poor results. The truck record showed up worse than the passenger car. Mr. Allen stated that improper care of the brakes was the principal cause for the poor showing since groupings by makes of trucks tested showed, in general, as wide a range of performance between trucks of the same make as between different makes.

Albert N. Dingee has been appointed advertising manager of the Electric Storage Battery Company to succeed the late Alfred B. Kreitsburg. Mr. Dingee, a member of the sales department for 18 years, has been closely associated with the vice-president-sales manager since 1920.

**C**OMPULSORY truck service and the establishment of inland terminals by railroads operating in the New York area were recommended last week by Henry C. Ames, examiner to the Interstate Commerce Commission, in a program designed to solve the New York terminal problem. Mr. Ames pointed out that in order to carry out his recommendations additional authority would have to be delegated the Commission from Congress. He, therefore, urged that steps be taken to bring about this legislation.

The examiner found that the methods used by the railroads handling New York freight were in some instances in violation of the Interstate Commerce Commission act. While he recognized the large investments of the railroads (Turn to page 52, please)

Frank V. Hadas has been appointed factory manager of the General Motors Truck Company's main plant, according to an announcement by Paul W. Seiler, president. Mr. Hadas for 20 years has been an important factor in the Ford organization, where he was in charge first of branch service, and later of branch manufacturing operations. Mr. Hadas in his new capacity succeeds H. J. Warner, who now becomes assistant to President Seiler. Mr. Warner was for seven years vice-president in charge of manufacturing and member of the Board of the Federal Motor Truck Co., Detroit. He also occupied a similar position with General Motors.

**M**ORE than 30,000 people are expected to attend the twenty-sixth annual convention and exposition of the American Road Builders' Association to be held in Cleveland Jan. 14-18. This attendance will comprise highway engineers, officials and contractors from all states in the Union, as well as representatives and delegates from 28 foreign countries. Preliminary reports indicated that the exposition will be the largest of its kind ever held. Over 500 carloads of the latest improved road-building equipment and materials occupying a space of almost eight acres will be on display for inspection and comparison.

B. A. McDonald has been appointed vice-president and treasurer of Advertisers, Inc., recently formed by Lee Anderson, who handles the advertising of Dodge Bros. Corp. and Graham Bros. trucks. Mr. McDonald resigned as vice-president and treasurer of the Kelvinator Corp. to take over his new position.

R. W. Rudden, newly appointed first vice-president and general manager of the Federal Motors Truck Co. Mr. Rudden entered the Federal organization 15 years ago as secretary to M. L. Pulcher, president.



**P**URCHASE by the Johns-Manville Corp. of the assets and the entire line of products of the Celite Products Co. has been completed. The Celite Products Co. bring to Johns-Manville an annual business of more than \$4,000,000 in their sales of high temperature insulation and kindred lines.

Walker Mfg. Co., jack manufacturer, is building a 100 by 200-ft. addition to its plant. The building will cost about \$100,000 including new machinery, tools and other equipment.

**S**EVENTEEN college men were recently graduated from the third Relay Motors sales school, according to G. L. Gillam, president, Relay Motors Corp., Lima, Mich. Some of these graduates have gone into the field sales organization while others have been retained at the factory in the sales and other divisions. The course provides a background of factory procedure as well as service instruction that will equip the students to be of practical assistance to both dealers and owners.

B. M. Seymour has resigned as manager of the New York branch of the General Motors Truck Co., where he had charge of taxicab and truck sales, and has joined Bradfield Motors, Inc., of Chicago, as sales manager.

**C**OINCIDENT with the announcement of the acquisition of the Adams Express Co., the American Express Co. and the American Railway Express Co. by interests affiliated with the railroad and banking fields comes the report that these interests may organize a gigantic motor freight service. This probability was made clear in a statement by W. B. Storey, president of the Atchison, Topeka & Santa Fe Railway and chairman of the Uniform Express Contract Committee of American Railway Executives. There is also a possibility that these interests may begin a more widespread container car service, similar to those in use now on the New York Central, Pennsylvania, Missouri Pacific and Lehigh Valley railroads.

J. V. Harrigan, manager of the truck and bus division, General Motors Argentina, S. A., is returning to the United States for a business trip and short vacation. While in Argentina, Mr. Harrigan completed a field survey, market analysis and detailed study of the entire Argentina Republic in connection with the future possibilities of the truck and bus business in that country.

**G**ASOLINE taxes during 1927 were increased in 24 states, the average being .63 cents per gallon, according to a survey just completed by the American Road Builders' Association. On Jan. 1, 1927, the average gasoline tax in the 44 states and the District of Columbia, was 2.5 cents per gallon. On Jan. 1, 1928, the increases put into effect during the previous 12 months, brought the average tax up to 3.19 cents per gallon. During the year four states increased their gasoline taxes 2 cents a gallon, 16 states placed 1 cent increases into effect, and three states increased the tax ½ cent per gallon.

Negotiations for the purchase of Brown-Lipe Gear Co. by the Unit Corp. of America are reported to be under way.

**A**MERICAN Electric Railway Association will hold its Forty-eighth Annual Convention and Exhibit in the new Atlantic City Municipal Auditorium, Atlantic City, N. J., Sept. 28-Oct. 4. Cleveland has been the scene for this convention during the three past years. A diagram of the floor space will be mailed May 1.

## "The Paramount Question with the Fleet Operators on the Pacific Coast is



Myers Magazines on more than 300 buses in Detroit have saved a huge maintenance bill.

### 'How can we reduce Maintenance and Operating Costs?'"

(From the report of Sub-Comm. No. 2 on Pacific Coast Operation and Maintenance Methods. Presented by Mr. E. C. Wood of the Pac. Gas & Elec. Co. at the Transportation Meeting of the Society of Automotive Engrs.—Newark, N. J., Oct. 16-19)

#### —Big Operators Speak—

Messrs. Wood (Chairman), Drake, Maulsby, Meybem, Penfield, Power, Schaeffer, Shaw, Stalnaker, Strong, Wainscoat, Weiss, and Van Dennis—heads of 15 big fleets—deserve high compliment for compiling and presenting this report. It has been called "the most complete and pertinent report ever made on this tremendously important phase of automotive transportation."

It contains 64 pages, closely typed—with meat on every page.

It refers, directly or indirectly, to chassis lubrication on 12 separate pages. The *first subject* in its capitulation is LUBRICATION—(a) Engine (b) Chassis.

On page 33 under RECOMMENDED CHANGES in chassis design it calls for "A Magazine Oiling System."

Standard equipment on Reo Speed Wagons, trucks and buses. Also on Lange, Ward LaFrance trucks, and Stutz cars.

The

### Myers MAGAZINE OILING System

is doing what these men desire. It is a 10-year-tried-and-proven method of filtering and feeding oil, slowly but *CONSTANTLY* to each bearing.

Each bearing has its own Magazine—*no piping*. Each Magazine filled quickly from a tank under air pressure. Each filling lasts for 1500 to 3000 miles travel.

It eliminates a host of small troubles and repairs. Keeps 'em rollin'.

Built into the chassis it costs less than a salesman's visit.

Rugged — Simple — Efficient  
Doubles the life of the bearings.

Many fleet operators have standardized on the Myers system—and *they specify it*.



## CHASSIS LUBRICATING COMPANY, Inc.

Rahway, N. J.

(Home Office)

Detroit, Mich.

(Kresge Bldg.)

Frank N. Sim has been appointed advertising manager for the Dodge Bros. division of the Chrysler Corp. Mr. Sim first became identified with Dodge Bros. as their field representative in 1924. He was formerly assistant advertising manager of the Timkin-Detroit Axle Co.

**T**RAFFIC congestion, heretofore considered a problem only in cities, has spread into the country, according to a survey just completed by the U. S. Bureau of Public Roads, making certain recommendations for future construction of highways tending to increase speed and decrease menace to life and property.

The outstanding need, the department advises, for highways is the acquisition of wider right-of-ways in order to allow widening of same. It also demands that highways be designed for safe use at higher speeds, and that arterial routes be improved with the service of the entire route in mind. In metropolitan areas congestion has emphasized the urgency of grade crossing elimination, wider pavements and the building of relief and by-pass highways.

K. K. McGarvey has been appointed to the equipment sales engineering staff of the AC Spark Plug Co. with headquarters in Detroit. Mr. McGarvey was formerly secretary of the engineering department of the AC Co. for the past three years.

**N**EGOTIATIONS were recently completed between American-LaFrance and the Step-N-Drive Truck Corp. of Buffalo, for the sale and service of Step-N-Drive house-to-house delivery truck through American-LaFrance direct factory branches, according to an announcement made by C. B. Rose, president of American-LaFrance and Foamite Corp.

Ed. Hancock, manager of the Detroit branch of the Wood Hydraulic Hoist & Body Co., has been transferred to Gar Wood Corp., Inc., as general manager in charge of production. James Works, from the Los Angeles branch, succeeds him as manager of the Detroit branch.

**A**SURVEY of operations of 235 electric railway companies, operating a total of 12,277 miles of road, compiled and made public by the Interstate Commerce Commission, shows that these companies were operating 887 buses and 9911 passenger carrying cars during 1927. The figures are obtained from annual reports filed with the commission by the railways.

Carlton Dyer, advertising manager of the Ford Motor Co. of Canada, Ltd., was elected president of the Association of Canadian Advertisers at the recent annual conference.

**T**HE twentieth annual sales conference of Oakite Products, Inc., was held recently in the New York offices of the company. The technical staff, district sales managers, field service men and executives from 33 states and Canada, came together in daily discussions relative to cleaning and Oakite.

Edwin White has joined the Curtis Auto Co., Milwaukee, Reo distributor, as director of service. Mr. White was formerly associated with the San Francisco branch of the Reo as service manager.

**C**OMBINED opposition of the highway officials of 45 states of the nation to the further granting of permits or franchises for privately owned and operated toll bridges on state or Federal-Aid highways was placed on record by the American Association of State Highway officials who met in convention at Chicago last month. Opinions appeared to favor the plan used in Kentucky, where the Highway Department is empowered to finance bridge projects.

**T**HE Pacific Electric Railway Co. announced that it will enter the field of motor truck transportation. A subsidiary, the Pacific Electric Motor Transport Co., has been organized to handle this type of business. Operations are expected to get under way in a month.

"The transport company," says D. W. Pontius, vice-president of the railway, "will perform a complete service from shipper's store-door to consignee's store-door under a through rate that will cover the entire service. The company's trucks will pick up shipments at the shipper's door and haul them to Pacific Electric Railway's rail stations where they will be transferred to rail cars. Under a contractual arrangement the railway will make the line haul to the station of destination, where the load will again be transferred to the company's trucks for delivery to the consignee's place of business."

J. F. Ohmansiek has been appointed district sales representative of the Standard Motor Truck Co. on the Pacific Coast with headquarters at 309 W. Colorado Blvd., Glendale, Cal.

**N**ATIONAL Automotive Parts Association finished its fiscal year ended Nov. 1, 1928, with a net increase in total sales volume of 21.35 per cent over the preceding 12 months period, according to a statement issued at the recent annual convention of the association held at Detroit. H. G. Root was reelected president of the board of directors; W. W. Martin, vice-president; A. F. Baxter, R. W. Boozer, A. C. Darling, Douglas Hayes, A. G. Locke and Matt Lawson as members of the board. D. Andrews was again chosen chairman of the manufacturers' advisory board. Other members reelected to this body were C. E. Hamilton, Automotive Gear Works, Inc.; Fred Blickwede, Morse Chain Co.; A. E. Herrick, Brown-Lipe Gear Co.; C. C. Blanchard, Borg & Beck Co.; D. Gray Maxwell, Asbestos Textile Co.; M. J. McCarthy, Precision Products Co. Charles H. Davis was reappointed secretary-treasurer.

H. W. Knapp has been appointed general sales representative for the McQuay-Norris Mfg. Co., with headquarters in St. Louis.

**I**NTERNATIONAL Motors has now developed and has on a production basis a complete line of dump bodies to fit the Models AB, AK and AC chassis. These dump bodies are standardized to such an extent that production on the complete line varies but little and it is possible to produce in quantity and keep in stock for such needs as may arise.

**T**HE Michigan Steel Casting Co. is preparing to manufacture a new type of cast steel truck wheel for use with pneumatic tires. The wheel will be known as the Nelson wheel, having been designed by E. A. Nelson. L. L. Kinseler, formerly of the Erie Malleable Co., who handles the sales engineering work for the Van Wheel Corp., is in charge of sales development work.

In a reorganization of sales executives C. W. Matheson has been appointed general sales manager of Dodge Bros. Corp., according to an announcement by J. F. Fields, vice-president in charge of sales of the Chrysler Corp.

**S**TEWART Motor Corp. reports that for the first ten months of 1928, 55 per cent more trucks have been produced than for the same period last year. Stewart reports that its 1926 production was 41 per cent over 1925, and that 1927 was 45.77 per cent greater than in 1926.

## Coming Events

### SHOWS

- \*Albany, N. Y.—State Armory...Mar. 19-26
- \*Buffalo, N. Y.—174th Regiment Armory...Jan. 12-19
- \*Chattanooga, Tenn.—Hippodrome...Jan.
- \*Chicago—National Coliseum...Jan. 26-Feb. 2
- \*Cleveland—Cleveland Auditorium, American Road Builders' Assn., Jan. 14-19
- \*Detroit, Mich.—Convention Hall...Jan. 19-26
- \*Harrisburg, Pa.—Shaffer Bldg....Feb. 2-9
- \*Mankato, Minn.—Mankato Armory, Feb. 13-16
- New York—National, Grand Central Palace...Jan. 5-12
- \*Providence, R. I.—Cranston St. Armory...Feb. 16-23
- \*Quebec, Can.—Drill Hall...Mar. 16-23
- Chicago, Ill., Palmer House, National Automobile Dealers Assn. ....Jan. 28-29

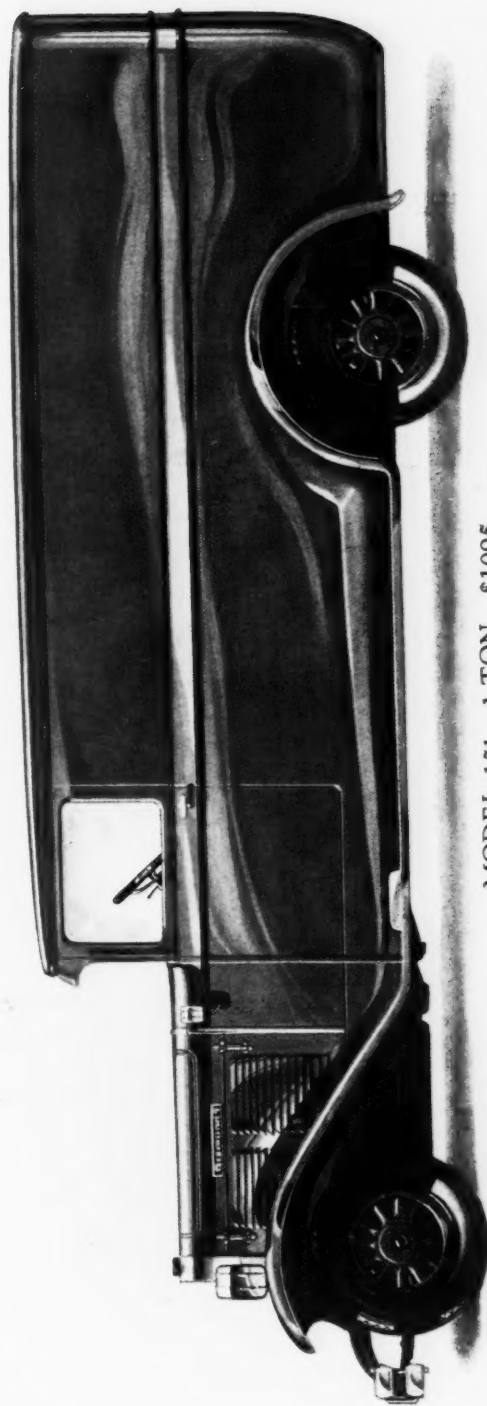
### CONVENTIONS

- Cleveland, Ohio—American Road Builders' Assn. ....Jan. 14-19
- Cleveland, Ohio...Jan. 15
- Meeting—Manufacturers and Distributors of Motor Truck Equipment.
- Cleveland, Ohio—Cleveland Hotel...Jan. 16
- Meeting—North Central Div. of Natl. Highway Traffic Assn.
- New York—Commodore...Jan. 7
- National Automobile Dealers Assn.

\* Include Truck Exhibit.

# DIAMOND T

*Introduces*  
FOUR GREAT SIXES



MODEL 151 1-TON \$1095

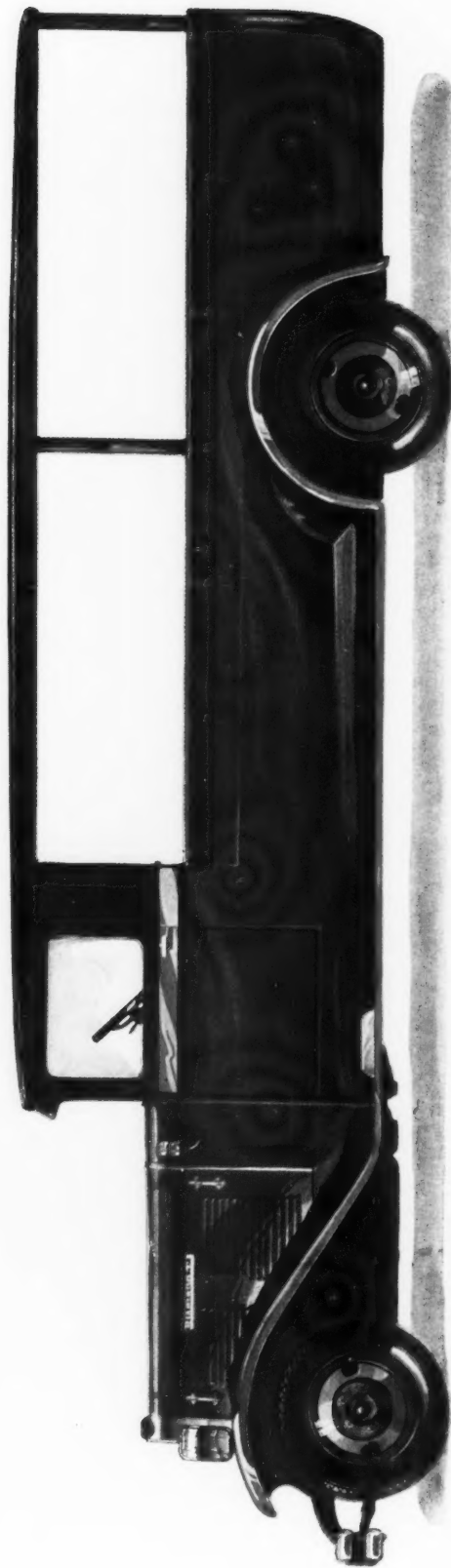


## MODERN MOTOR TRUCKS BY DIAMOND T

**D**IAMOND T, builder of fine motor trucks for nearly a quarter of a century, again proves its engineering leadership of the motor truck industry! Here are trucks that not only *are* ready to go somewhere quick, but *look as though they were*.

Diamond T pioneered good looks in good trucks for a very definite reason. Handsome trucks *sell* better . . . and handsome trucks are a far better advertisement for their owners. The style that shows in every line of these great trucks has a real money value—to dealer and to operator.

*"The Handsomest Truck in America"*



MODEL 290 1½-TON \$1475

# Swift, safe, sturdy and smartly styled

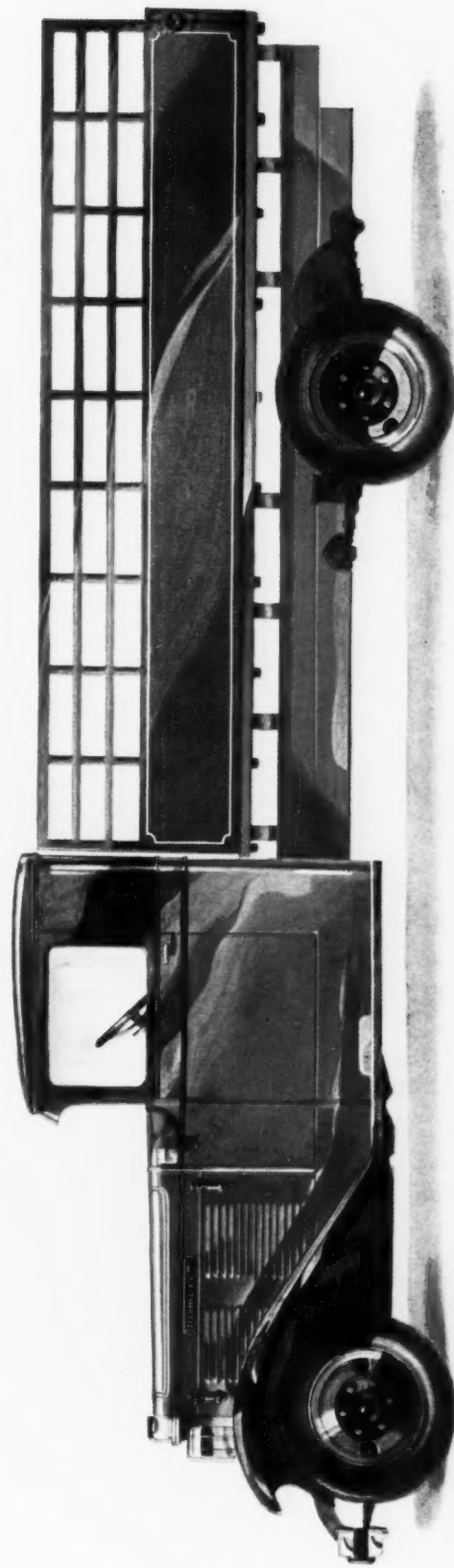
*In the capacity range where 80% of all trucks are sold! If no other motor trucks were built than these four sizes, 80 per cent of the truck buyers of America would be perfectly satisfied! And there are no finer, swifter, safer, surer trucks built than "The Handsomest Trucks in America"—Diamond T.*

*In the price range where most operators expect and prefer to buy! Trucks, far more than passenger cars, are always investments in transportation. So many ton-miles at such and such a speed, and with so much snap and smartness, for just so much money. No sensible truck buyer expects to get something for nothing. He knows that in this price range an honest builder can produce excellent trucks at a living profit.*

*Offering performance today's traffic and cost competition demand! Diamond T Sixes are trucks of today. Great 7-bearing motors provide a reserve of power at lower engine speeds which no load or pace within reason will ever overtax. In dense traffic, the added flexibility and pick-up mean swifter deliveries—and longer motor life. On the open road, higher speeds are safe, because of Lockheed internal hydraulic 4-wheel brakes.*

*Bearing the name of a builder 24 years in the business! Diamond T today is the pioneer of modern truck transportation—creating without hesitation the exact type of truck today's traffic demands. And that engineering leadership has already brought its own reward—55% sales increase so far in 1928!*

*"The Handsomest Truck in America"*



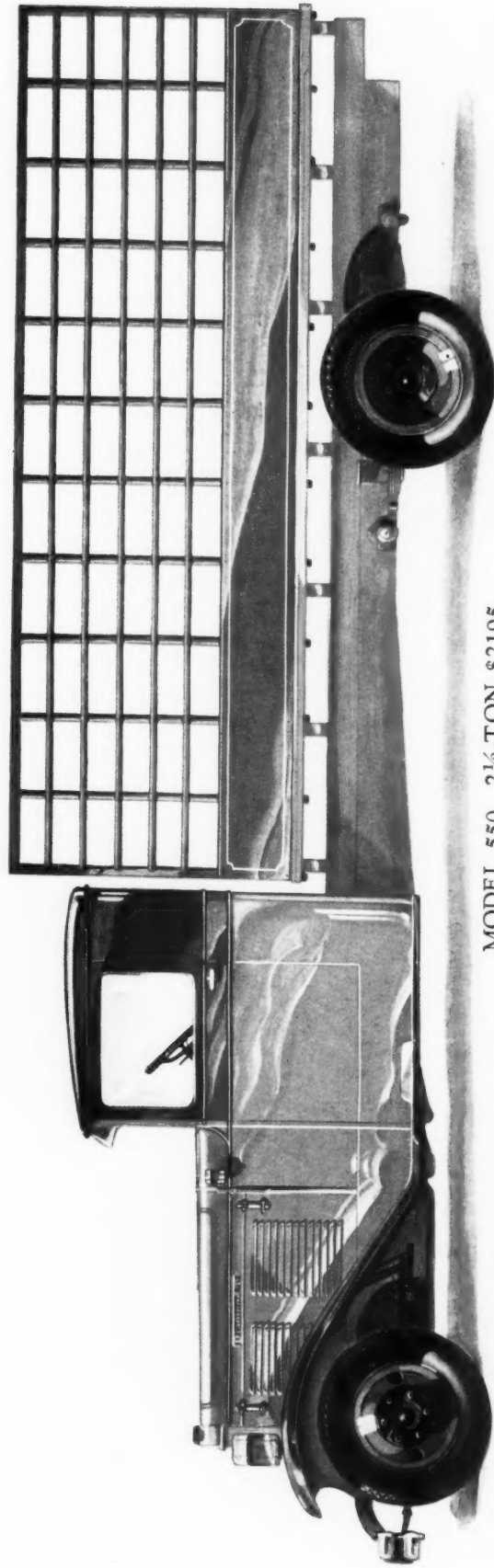
MODEL 302 2-TON \$1650



**D**IAMOND T presents Models 151, 290, 302 and 550 to the motor truck dealers of America as proof positive of the money-earning possibilities of the Diamond T franchise. Each of these four great trucks has its market ready and waiting. Each offers, by every test from specifications to performance on the road, more evidence of fine building and close pricing than was ever offered before. Write TODAY for detailed specifications and full facts about the Diamond T franchise.

SEE THESE MODELS DURING THE NEW YORK SHOW JAN. 5TH-12TH, 1929. THE COMPLETE LINE WILL BE ON EXHIBITION AT THE DIAMOND T FACTORY BRANCH WILLIAM AND HENRY STREETS, LONG ISLAND CITY.

*"The Handsomest Truck in America"*



MODEL 550 2½-TON \$2195

**DIAMOND T MOTOR CAR CO.**

*Twenty-sixth St.*

*Chicago, Ill.*

# Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

Those Chassis Which Are Sold and Recommended for Bus Use Are Designated in the Following Table by Reference Sign (B) in Front of the Name

For Motor Bus Chassis See Pages 48 and 50

\* Changes

† New Models

Key of abbreviations, page 51

(Where prices are not given it is because we have been unable to get them from authoritative sources)

Trade Name and Model	General			Engine				Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase		Chassis Weight (lbs.)										
	Chassis Price	Tire Size		Make and Model	Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)		Radiator (Make)	Carburetor (Make)	Fuel System		Ignition System (Make)	Generator and Starter (Make)			Type and Make	Make and Model		Location	No. of Forward Speeds	Universals (Make)	Make and Model	Final Drive	Type	Total Reduction in High	Total Reduction in Low	Brakes, Location	
		Standard Wheelbase (Inches)	Maximum Wheelbase (Inches)							Furnished			Front (Inches)	Rear (Inches)			Carburetor (Make)	Fuel Feed													
1000 Pounds																															
Chevrolet Nat. Com.	395	107	107	B 30x4 50	Own	4-31x4 1/2	21 H	PC	PC	Non	Har	Car	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.18	13.88	E* E*	Own Nat.	Own	1690	55	2520
Durand Com. Ch.	495	107	107	B 28x4 75	Con	4-31x4 1/2	18 1/2 L	PC	PC	Non	Har	Car	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.87	16.16	E* E*	Own Nat.	Own	1650	55	2520
Fargo Packet.	545	107	107	B 29x4 75	Own	4-31x4 1/2	21 1/2 L	PC	PC	Non	Har	Car	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.7	16.16	E* E*	Own Nat.	Own	1825	55	2520
General Motors T-11	535	110	110	B 29x4 75	Own	6-31x3 3/4	25 3/4 L	PC	PC	Non	McC	Car	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.36	14.48	E* E*	Own Nat.	Own	1820	55	2520
Graham Brothers SE	665	110	110	B 29x5 00	Con	6-31x3 3/4	27 3/4 L	PC	PC	Non	McC	Car	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.45	15.23	G* G*	Dodge	Gem	1965	55	2520
Graham Brothers SEW	675	110	110	B 31x5 25	Con	6-31x3 3/4	27 3/4 L	PC	PC	Non	McC	Car	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.7	16.16	G* G*	Dodge	Gem	1965	55	2520
Reo Speed Wagon Jr.	895	115	115	B 28x5 25	Con 16E	6-31x4 1/2	27 3/4 L	PC	PC	Non	Har	Sch	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.7	14.63	E* E*	Dodge	Gem	1995	55	2520
*Stud. Engine 52B.	675	109	109	B 30x5 25	Con 9F	6-29x4 1/2	18 2 L	PC	PC	Non	Lon	Sch	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	5.12	15.6	H* H*	Sal	Gem	2290	55	2520
1500 Pounds																															
Fargo Clipper	725	120	120	B 29x5 50	Own	6-31x4 1/2	23 1/4 L	PC	PC	Non	Own	Str	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.7	16.16	G* G*	Own Nat.	Own	3175	55	2520
Graham Brothers DE	775	120	120	B 31x5 25	Con	6-31x3 3/4	27 3/4 L	PC	PC	Non	Own	Str	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.7	16.16	G* G*	Own Nat.	Own	2630	55	2520
Graham Brothers DEF	830	120	120	B 30x5 50	Con	6-31x3 3/4	27 3/4 L	PC	PC	Non	Own	Str	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.7	16.16	G* G*	Own Nat.	Own	2630	55	2520
Graham Brothers DEW	790	120	120	B 30x5 50	Con	6-31x3 3/4	27 3/4 L	PC	PC	Non	Own	Str	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.7	16.16	G* G*	Own Nat.	Own	2630	55	2520
Int. Harvester Spec. Del.	124	124	124	B 30x5 50	Con	6-31x4 1/2	23 1/4 L	PC	PC	Non	Own	Str	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.9	15.1	H* H*	Tim	Tim	2400	55	2520
Kleber	1170	121	121	B 30x5 50	Con	6-31x4 1/2	23 1/4 L	PC	PC	Non	Own	Str	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.9	15.1	H* H*	Tim	Tim	2400	55	2520
Reo Fast Mail	725	118	118	B 30x5 50	Con	6-27x4 3/4	19 8 L	PC	PC	Non	Own	Str	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.5	14.8	A* A*	Own	Own	1760	55	2520
*Stewart Buddy	895	118	118	B 30x5 50	Con	6-27x4 3/4	19 8 L	PC	PC	Non	Own	Str	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.5	14.8	A* A*	Own	Own	1980	55	2520
Vale	1165	112	112	B 30x5 25	Own	6-31x4 1/2	24 4 H	PC	PC	Non	Own	Str	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	4.9	30.0	F* F*	Own	Own	2680	55	2520
1 Ton																															
*Aene 14	120	120	120	P 30x5 50	Con	4-31x4 1/2	18 2 L	PC	PC	Non	Per	Til	V	A-L	A-L	P. B&B	W-G	U	3	Blo	Cl	U	1 1/2	6.1	18.73	B* B*	Sal	Ros	90	55	2520
Aene 16	120	120	120	P 30x5 50	Con	6-27x4 3/4	19 8 L	PC	PC	Non	Per	Til	V	A-L	A-L	P. B&B	W-G	U	3	Blo	Cl	U	1 1/2	6.1	18.73	B* B*	Sal	Ros	90	55	2520
Aene 20P	1155	132	132	B 32x6 00	Con	6-31x4 1/2	27 3/4 L	PC	PC	Non	Chi	Zen	G	Del	B-L	B-L	B-L	U	3	Blo	Cl	U	1 1/2	4.5	27	A* A*	Shu	Lav	92	55	3500
Biederman	133	133	133	P 30x5 50	Con	6-31x4 1/2	27 3/4 L	PC	PC	Non	Har	Zen	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	5.5	37	A* A*	Shu	Ros	92	55	3200
Chevrolet Cap	495	124	124	P 34x5 50	Own	4-31x4 1/2	21 7 H	PS	PS	Non	Har	Zen	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	5.5	37	A* A*	Shu	Ros	92	55	3200
Clydesdale 16	140	140	140	P 34x5 50	Con	4-31x4 1/2	25 9 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	6.43	30.86	A* A*	Tim	Tim	2170	48	2170
Commerce 8A	130	130	130	P 30x5 50	Con	6-31x4 1/2	25 3 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	5.66	20.5	A* A*	Shu	Ros	3450	55	2520
Commerce 20Z	136	136	136	P 30x5 50	Con	6-31x4 1/2	25 3 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own Nat.	U	1 1/2	5.66	20.5	A* A*	Shu	Ros	2900	55	2520
Day-Elder M.	1345	131	131	P 30x5 50	Con	6-31x4 1/2	27 3/4 L	PC	PC	Non	G&O	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3400	55	2520
Denby 41	128	128	128	P 34x5 50	Her O	4-4x5	25 6 L	PC	PC	Non	G&O	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Diamond T76	130	130	130	P 30x5 50	Con	4-4x5	25 6 L	PC	PC	Non	G&O	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Diamond T150	127 1/2	127 1/2	127 1/2	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	G&O	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Eagle 10	130	130	130	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	G&O	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Federal Scout	123	123	123	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Federal Scout	123	123	123	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Federal Scout	140	140	140	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Fisher J. Express	136	136	136	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Garford 20Z	140	140	140	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
General Motors T-19	745	126 1/2	126 1/2	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
General Motors T-20	1095	132 1/2	132 1/2	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Gramm-Bernstein 10	1485	133	133	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Hahn S4	138	138	138	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Hahn S46	137	137	137	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Indiana 200	138	138	138	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Int. Harv'tr 6 Sp. Spec	124	124	124	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Kleber	1450	140	140	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Larabee A3	133	133	133	P 30x5 50	Con	6-31x4 1/2	25 6 L	PC	PC	Non	Lon	Zen	V	D-R	D-R	P. B&B	Mun T23N	U	3	Spi	Col	U	1 1/2	5.5	23.9	A* A*	Col	Han	3100	55	2520
Luedinghaus																															

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Trade Name and Model	General				Engines						Electrical System		Clutch	Gearset		Rear Axle		Front Axle Make and Model	Steering Gear (Make)	Gear Ratios		Brakes, Location	Chassis Weight (lbs.)					
	Standard Wheelbase (inches)	Maximum Wheelbase (inches)	Tire Size		Make and Model	Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System		Generator and Starter (Make)	Type and Make	Make and Model	Location			No. of Forward Speeds	Universal (Make)			Make and Model	Type	Total Reduction in High	Total Reduction in Low	
			Front (inches)	Rear (inches)								Carburetor (Make)																Fuel Feed
<b>1 Ton—Cont'd</b>																												
Service 20Z	136	128	P 30x5	P 30x5	Bud HS6	6-3/4x4 1/2	27 3/4	L	PC	Non	Lon	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						3400				
Starbaker Buddy	1075	128	P 30x5	P 30x5	Lyc S	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						2775				
Starbaker GD-N	995	140	P 30x5	P 30x5	Lyc S	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						2860				
United 16	122 1/2	122 1/2	P 32x4 1/2	P 32x4 1/2	Wau X	4-3/4x4 1/2	18 1/2	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						2500				
United 16C	122 1/2	122 1/2	P 32x4 1/2	P 32x4 1/2	Con 20L	4-3/4x4 1/2	18 1/2	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						2500				
8 U. S. U.	1850	138	P 34x5	P 34x5	Bud WTU	4-3/4x4 1/2	27 3/4	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3400				
Wachusett S.	152	152	S 34x5	S 34x5	Con 8R	4-3/4x4 1/2	27 3/4	L	PC	Non	G&O	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						3242				
White 15B	154 1/2	133 1/2	P 30x5	P 30x5	Own GKA	6-2 1/4x3 1/2	20 1/2	X	FF	Non	Own	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						2700				
Willis Knight T-100	130	130	P 30x5	P 30x5	Own	6-2 1/4x3 1/2	20 1/2	X	FF	Non	Own	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						2700				
<b>1 1/4 Ton</b>																												
Auburn 20B	132	132	P 30x5	P 30x5	Lyc S	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3350				
Biederman	154	154	P 32x6	P 32x6	Con 8R	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3600				
Brookway Junior	130	130	P 30x5	P 30x5	Wau X	4-3/4x4 1/2	18 1/2	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3100				
Brookway JF	137	137	P 30x5	P 30x5	Wau X	4-3/4x4 1/2	18 1/2	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3450				
Clinton 20B	153	153	P 30x5	P 30x5	Bud WTU	4-3/4x4 1/2	27 3/4	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3750				
Clydesdale 10A	154	154	P 30x5	P 30x5	Con S4	4-3/4x4 1/2	27 3/4	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Commer 25Z	136	136	P 32x6	P 32x6	Bud HS6	6-3/4x4 1/2	27 3/4	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
*Corbett 620	137	137	P 32x6	P 32x6	Bud HS6	6-3/4x4 1/2	27 3/4	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Diamond T77	133 1/2	133 1/2	P 30x5	P 30x5	Her WKA	6-3/4x4 1/2	27 3/4	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Garford 25Z	136	136	P 30x5	P 30x5	Bud HS6	6-3/4x4 1/2	27 3/4	L	PC	Non	Per	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Goffredson B24	131	160	P 30x5	P 30x5	Dodge	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3200				
Graham Brothers BE	995	130	P 30x5	P 30x5	Dodge	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3200				
Graham Brothers BEW	1030	130	P 30x5	P 30x5	Dodge	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Graham Brothers IEF	1110	140	P 32x6	P 32x6	Dodge	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Graham Brothers BEF	1040	130	P 32x6	P 32x6	Dodge	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Graham Brothers IE	1065	140	P 30x5	P 30x5	Dodge	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Graham Brothers IEW	1100	140	P 30x5	P 30x5	Dodge	6-3/4x4 1/2	27 3/4	L	PC	Non	Fed	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Gramm 263 N	1455	133	P 30x5	P 30x5	Lyc S	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Gramm-Bernstein 10	129	129	P 30x5	P 30x5	Her OX	4-4x5	22 5/8	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
*Indiana 11X	129	129	P 30x5	P 30x5	Her OX	4-4x5	22 5/8	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Int. Harvester S-24	129 1/2	129 1/2	P 32x4 1/2	P 32x4 1/2	Lyc CT	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Int. Harvester S-26	130	134	P 32x4 1/2	P 32x4 1/2	Lyc CT	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Macfar 30	124	154	P 32x6	P 32x6	Bud HS6	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Master 11	132	132	P 35x5	P 35x5	Bud WTU	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Republic 75-6	128 1/2	128 1/2	P 30x5	P 30x5	Lyc CT	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Saintord S.	120	188	P 30x5	P 30x5	Con S4	6-2 1/4x3 1/2	19 1/2	X	FF	Non	Own	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Selden Paememaker 25	142	136	S 30x5	S 30x5	Bud HS6	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Service 25Z	136	136	P 32x6	P 32x6	Con 8R	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Sterling DB7	137	145	P 32x6	P 32x6	Lyc CT	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Stewart 16	1295	130	P 32x6	P 32x6	Lyc CT	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Stewart 16X	1295	130	P 32x6	P 32x6	Lyc CT	6-3/4x4 1/2	27 3/4	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
United 20	128	148	P 30x5	P 30x5	Her OX	4-4x5	22 5/8	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
United 20C	128	148	P 30x5	P 30x5	Her OX	4-4x5	22 5/8	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Valley 57	1295	132	P 32x6	P 32x6	Her GRC	4-4x5 1/2	25 1/8	L	PC	Non	Own	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
White 57	2725	157 1/2	P 32x6	P 32x6	Con 31L	6-2 1/4x3 1/2	19 1/2	X	FF	Non	Own	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
Woods 2086	129	129	P 30x5	P 30x5	Con 31L	6-2 1/4x3 1/2	19 1/2	X	FF	Non	Own	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						3550				
<b>1 1/2 Ton</b>																												
Acme 24	136	156	P 30x5	P 30x5	Con S4	4-4x4 1/2	28 9/8	L	PC	Non	Per	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						3450				
Acorn 30	2300	144	P 30x5	P 30x5	Con S4	4-4x4 1/2	28 9/8	L	PC	Non	Per	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						4400				
Acorn 30-P	2300	144	P 30x5	P 30x5	Con S4	4-4x4 1/2	28 9/8	L	PC	Non	Per	Zen	V	A-L	D-R	A-L	P. B&B	Mun T23N						4400				
Armstrong 30B	148	187	S 34x6	S 34x6	Her OX	4-4x5	22 5/8	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						4400				
Armstrong 30B	150	188	S 34x6	S 34x6	Her OX	4-4x5	22 5/8	L	PC	Non	Own	Zen	G	A-L	D-R	A-L	P. B&B	Mun T23N						4400				
Armstrong 30-6	153	192	S 34x6	S 34x6	Bud HS6																							

City of Seattle Commerce Super 11	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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**Key of abbreviations, page 51**

[illegible]

160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
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Key of abbreviations, page 51

Trade Name and Model	General			Engine				Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	Chassis Price	Standard Wheelbase (inches)	Maximum Wheelbase (inches)	Tire Size	Make and Model	Number of Cylinders	N.A.C.C. rated H.P.	Valve Arrangement	Oiling System		Governor (Make)	Radiator (Make)	Fuel System		Ignition System (Make)	Generator and Starter (Make)			Type and Make	Make and Model	Location	No. of Forward Speeds	Universals (Make)	Make and Model	Type	Total Reduction in High	Total Reduction in Low	Brakes, Location																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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Clyde 8-50Z	150	150	150	S 36x8	Con K4	4-4 1/2x5 1/2	27 2 1/2	PC	PP	Own	Own	Own	Zen	Bos-A	Bos-A	D-B-L	B-L 35	4	U	Spi	5300	Ros	15300	A*	45 48	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300	Ros	15300	4	5	8.5	63.0	E	15300

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Key of abbreviations, page 51

Trade Name and Model	General			Engine					Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase		Chassis Weight (lbs.)											
	Standard Wheelbase (inches)	Maximum Wheelbase (inches)	Tire Size	Rear (inches)	Front (inches)	Make and Model	Number of Cylinders	Bore and Stroke	N.A.C.C. Rated H.P.	Valve Arrangement		Oiling System	Governor (Make)	Radiator (Make)	Fuel System		Ignition System			Generator and Starter (Make)	Type and Make		Make and Model	Location	No. of Forward Speeds	Universals (Make)	Make and Model	Final Drive	Type	Total Reduction in High	Total Reduction in Low	Brakes, Location	
															Chassis Price	Maximum Wheelbase	Furnished																
3 Ton—Cont'd																																	
Indiana 628	216	216 1/2	P 34x7	DP34x7	Wis H	6-4x5	38 1/4	H	FP	K.P.	Lon	Str	V	A	A-L	Eis	A-L	P. B&B	B-L 55	U	4	Spi	Cla 720	S	6.28	42.8	8	A*	Shu 5550	Ros	180	131	6585
Indiana 127	162	162 1/2	P 36x5	DP34x7	Her L	4-4 1/2x5 1/2	32 1/4	L	PC	Pie	Lon	Str	V	V	Eis	A-L	A-L	P. B&B	B-L 55	U	4	Spi	Cla 720	S	7.00	42.8	8	A*	Shu 5550	Ros	138	83	6490
Indiana 127A	141	141 1/2	P 32x6	DP34x7	Her K	4-4 1/2x5 1/2	28 9/16	H	SP	Own	Per	Own	G	G	Bos-R	D-R	D. B-L	B-L 51	U	4	Spi	Cla 720	S	7.00	41.72	8	A*	Shu 5550	Ros	87	56 1/2	6800	
Int. Harvester 63	147	147 1/2	P 36x5 1/2	S 36x10	Own 63	4-4 1/2x5 1/2	33 7/16	L	PC	Bud	Chi	Zen	V	V	Eis	A-L	A-L	P. B&B	B-L 51	U	4	Spi	Own 63	L	9.00	41.72	8	A*	Shu 5550	Ros	116	68	5660
Kenworth J	185	185 1/2	P 36x5 1/2	S 36x10	Bud DW6	4-4 1/2x5 1/2	28 9/16	H	SP	Own	Per	Own	G	G	Bos-R	D-R	D. B-L	B-L 51	U	4	Spi	Cla B720	L	7.25	46.8	8	A*	Tim 15302	Ros	132	89	6300	
King Zaiter 60	172	172 1/2	P 32x6	S 36x10	Con K4	4-4 1/2x5 1/2	33 7/16	L	PC	Han	Chi	Zen	G	G	Bos-R	D-R	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	9.25	49.5	8	A*	Tim 15302	Ros	132	87	6300	
King Zaiter 62A	153	153 1/2	P 34x7	DP34x7	Con 6B	6-3 1/2x5	33 7/16	L	PC	Pha	Chi	Zen	G	G	Bos-R	D-R	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	9.25	49.5	8	A*	Tim 15302	Ros	132	87	6300	
Kleber Speed	100	100 1/2	P 34x7	DP34x7	Con L4	6-3 1/2x5	33 7/16	L	PC	Non	Chi	Zen	G	G	Bos-R	D-R	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	7.75	41.5	8	A*	Tim 15302	Ros	170	106	6200	
Kleber Spec.	100	100 1/2	P 34x7	DP34x7	Con L4	6-3 1/2x5	33 7/16	L	PC	Non	Chi	Zen	G	G	Bos-R	D-R	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	7.75	41.5	8	A*	Tim 15302	Ros	170	106	6200	
Lange E3	142	142 1/2	S 36x5	S 36x12	Bud BUS	4-4 1/2x5 1/2	38 1/4	L	FP	Non	R-T	Str	V	V	Bos-R	D-R	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	10.5	56.2	2	A*	Tim 1544B	Ros	107 1/2	74 1/2	5950	
Lange H-1	145	145 1/2	S 36x5	S 36x10	Con K4	4-4 1/2x5 1/2	38 1/4	L	FP	Non	Own	Zen	V	V	Bos-R	D-R	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	9.12	88.6	6	A*	Tim 15500	Ros	109 1/2	69 1/2	6050	
Lange H-1	156	156 1/2	S 36x5	S 36x10	Her YXC	6-4 1/2x5 1/2	45 9/16	L	PC	Non	Own	Zen	V	V	Bos-R	D-R	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	9.33	50.0	4	A*	Tim 15500	Ros	132	91	6850	
Larabee XH25	173	173 1/2	P 32x6	DP32x6	Con 6B	6-3 1/2x5	33 7/16	L	PC	Opt	Fed	Zen	G	G	D-R	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	8.5	36.2	4	A*	Shu 5550	Ros	144	90	5650		
Macrae 64	177	177 1/2	S 36x5	DP36x5	Bud YBU1	4-4 1/2x5 1/2	32 1/4	L	PC	Pie	Own	Zen	Z	Z	D-R	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	8.5	45.4	4	A*	Tim 15302	Ros	151 1/2	95 1/2	7500		
Macrae 66	177	177 1/2	S 36x5	DP36x5	Bud BA	4-4 1/2x5 1/2	40 8/16	L	PC	Pie	Own	Zen	G	G	SF	N-E	D. B-L	B-L 51	U	4	Spi	Tim 65700D	W	8.5	45.4	4	A*	Tim 15302	Ros	151 1/2	95 1/2	7500	
Macrae 68	3400	146 1/2	S 36x4	DP36x4	Own AB	4-4 1/2x5	28 9/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AB	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U	4	Spi	Own AL	C	8.87	43.0*	4	A*	Own AK	Own	151 1/2	95 1/2	7500	
Macrae 68	3550	164 1/2	S 36x4	DP36x4	Own AL	4-4 1/2x5	43 1/16	L	PS	Own	Own	Str	E	E	N-E	P. Own	D. B-L	B-L 51	U														

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Trade Name and Model	General		Engine					Electrical System		Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase											
	Chassis Price	Standard Wheelbase (inches)	Maximum Wheelbase (inches)	Tire Size	Make and Model	Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System		Ignition System (Make)	Generator and Starter (Make)			Clutch	Make and Model	Location	No. of Forward Speeds	Universals (Make)	Make and Model	Type	Total Reduction in High	Total Reduction in Low	Brakes, Location		
												Carburetor (Make)	Fuel Feed																
Grass Premier 80	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44	36x44	36x8	Wau CU	4-43x51	30.6 L	PC	Wau	Chi	Str	V	Eis	A-L	D-B-L	B-L 55	A	7	M.M.	Tim 65700SP	W	F	8.25	46.0	G	Ros	Con 1803	Cab to rear axle	5400
Grass Premier 80-6	1875	36x44</																											

[illegible]

Amer.	La France	5 Ton.	3950	131	131
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Gasoline Tractor-Trucks	
Amer. La France 5 Ton.	3950 131
Amer. La France 7 Ton.	4950 133
Amer. La France 10 Ton.	4950 133
Amer. La France 13 Ton.	5500 133
Amer. La France 15 Ton.	5750 133
Amer. La France 15 Ton.	6000 133
Armletel 30.	115
Armletel 50.	116
Armletel 70.	119
Autoair HT	106
Autoair HST	108
Autoair MT	110
Diamond T T3T	119 1/2
Diamond T 32T	120 1/2
Diamond T 82T	118 1/2
Diamond T 82T.	145
Federal HD.	135
Federal HD.	135
General Motors K-10T	111 1/4
General Motors K-15T	111 1/4
Grum 35-6 ton.	4160 155 1/2
Grum 35-6 ton.	4160 155 1/2
Grum 45-10 ton.	4735 155 1/2
Grum 45-10 ton.	4735 155 1/2
Grum 60-15 ton.	5370 155 1/2
Grum 60-15 ton.	5370 155 1/2
Harvey WHT 6 ton.	3500 125
Harvey WHT 10 ton.	4250 125
Int. Harvester 43.	115
Int. Harvester 63.	120
Int. Harvester 103.	124
Int. Harvester 54C.	122
Int. Harvester 74C.	137
Int. Harvester 74C.	137
MacK AC 5-6 Ton.	3400 123 1/2
MacK AC 7-10 Ton.	4950 128
MacK AC 11-14 Ton.	5500 128
MacK AC 15 Ton.	6000 128
Pierce-Arrow XB.	3750 140
Pierce-Arrow XB.	3750 140
Pierce-Arrow RF.	5400 132
Pierce-Arrow RF.	6000 142
Schacht 5 Ton.	130
Schacht 7 Ton.	130
Schacht 13 Ton.	130
Schacht 15 Ton.	130
Walter FK.	6100 Opt
Walter FHR.	7600 Opt
Walter FHR.	7600 Opt
White 52T.	4700 170 1/2
White 51A.	3875 134

# Motor Bus Chassis Specifications

MAKE AND MODEL	GENERAL			ENGINE			ELECTRICAL SYSTEM			TRANSMISSION			REAR AXLE		FRONT AXLE	TIRES AND WHEELS				DIMENSIONS (In.)									
	Seating Capacity	WEIGHT		Make and Model	Number of Cylinders, Bore and Stroke	Radiator Make	Carburetor Make	Ignition System	Generator and Starter	Voltage and Amp.	Hr. Cap.	Low M. P. H.	Type and Make	Clutch		Gearset	Universal Make	Make and Model	Final Drive	Brake Location	Make and Model	Steering Gear	TIRES (In.)		Wheels—Make	Turning Radius (Ft.)	Floor Height	Length	Width
		Chassis Only	Chassis with Body																				Recommended Body Allowance	Wheelbase					
ACF 508	30	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
ACF 519 (gas. elec.)	60	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
ACF 601	23	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198
ACF 601	18	4910	8460	180	6B	Zen	Per	Zen	6-35x5	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153
Acme 116	22	5110	9280	205	Con 7T	Str	Per	Str	6-41x5 1/4	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153
Acme 112	22	5110	9280	205	Con 7T	Str	Per	Str	6-41x5 1/4	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153	45	6-153
Brookway JB	16	3975	4700	1500	Wis C	G&O	G&O	Zen	4-32x5	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway EB	20	3975	6350	2500	Wis SU	G&O	G&O	Zen	4-32x5	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway EB4	20	4150	6400	2500	Wis Y	G&O	G&O	Zen	4-32x5	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway H	26	6450	7975	3000	Wis H	G&O	G&O	Zen	4-32x5	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway H	26	6450	7975	3000	Wis F	G&O	G&O	Zen	4-32x5	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153
Brookway JBF	16	3450	4700	1500	Wis F	G&O	G&O	Zen	4-32x5 1/4	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6-153	38	6						

# Speed Stamina Economy

—make Willys-Knight Trucks the choice of  
progressive operators—

1-ton chassis—130" wheelbase

**\$1095**

1½-ton chassis—134"	wheelbase . . . . .	\$1545
1½-ton chassis—151"	wheelbase . . . . .	1595
2-ton chassis—150"	wheelbase . . . . .	1945
2-ton chassis—164"	wheelbase . . . . .	1995
2½-ton chassis—150"	wheelbase . . . . .	2545
2½-ton chassis—164"	wheelbase . . . . .	2595

Prices f.o.b. Toledo, Ohio,  
and specifications subject to  
change without notice.

The outstanding development in commercial transportation is the trend toward the *patented* Willys-Knight double sleeve-valve engine.

This superior six-cylinder motor—noted for increasing smoothness and efficiency, silent power and rugged stamina, remarkable freedom from repairs and carbon troubles—now powers a complete line of Willys-Knight trucks, ranging from 1-ton to 2½-ton capacity.

Willys-Knight trucks also have the important advantages of positive, mechanical four-wheel brakes, heavy duty truck-type clutch and transmission, Hotchkiss drive, extra deep, low-hung frame.

WILLYS-OVERLAND, INC., TOLEDO, OHIO  
Willys-Overland Sales Co., Ltd., Toronto, Canada



# WILLYS- KNIGHT

*Motor* **TRUCKS**

21	2680	6450	2500	1720	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
22	6800	11000	4000	2200	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
23	7200	11500	4200	2300	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
24	7600	12000	4400	2400	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
25	8000	12500	4600	2500	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
26	8400	13000	4800	2600	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
27	8800	13500	5000	2700	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
28	9200	14000	5200	2800	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
29	9600	14500	5400	2900	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
30	10000	15000	5600	3000	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
31	10400	15500	5800	3100	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
32	10800	16000	6000	3200	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
33	11200	16500	6200	3300	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
34	11600	17000	6400	3400	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
35	12000	17500	6600	3500	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
36	12400	18000	6800	3600	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
37	12800	18500	7000	3700	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
38	13200	19000	7200	3800	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
39	13600	19500	7400	3900	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
40	14000	20000	7600	4000	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
41	14400	20500	7800	4100	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
42	14800	21000	8000	4200	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
43	15200	21500	8200	4300	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
44	15600	22000	8400	4400	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
45	16000	22500	8600	4500	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
46	16400	23000	8800	4600	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
47	16800	23500	9000	4700	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
48	17200	24000	9200	4800	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
49	17600	24500	9400	4900	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
50	18000	25000	9600	5000	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
51	18400	25500	9800	5100	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
52	18800	26000	10000	5200	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
53	19200	26500	10200	5300	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
54	19600	27000	10400	5400	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
55	20000	27500	10600	5500	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
56	20400	28000	10800	5600	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
57	20800	28500	11000	5700	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
58	21200	29000	11200	5800	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
59	21600	29500	11400	5900	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
60	22000	30000	11600	6000	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
61	22400	30500	11800	6100	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
62	22800	31000	12000	6200	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
63	23200	31500	12200	6300	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
64	23600	32000	12400	6400	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
65	24000	32500	12600	6500	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
66	24400	33000	12800	6600	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
67	24800	33500	13000	6700	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
68	25200	34000	13200	6800	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
69	25600	34500	13400	6900	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
70	26000	35000	13600	7000	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
71	26400	35500	13800	7100	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
72	26800	36000	14000	7200	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
73	27200	36500	14200	7300	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
74	27600	37000	14400	7400	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
75	28000	37500	14600	7500	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
76	28400	38000	14800	7600	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
77	28800	38500	15000	7700	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
78	29200	39000	15200	7800	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
79	29600	39500	15400	7900	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
80	30000	40000	15600	8000	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
81	30400	40500	15800	8100	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
82	30800	41000	16000	8200	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
83	31200	41500	16200	8300	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
84	31600	42000	16400	8400	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
85	32000	42500	16600	8500	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
86	32400	43000	16800	8600	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
87	32800	43500	17000	8700	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Exi	12-220	38	D-B-L	B-L-35	4	Spi	Wis 4610	R	C*	P 32x6	Bud
88	33200	44000	17200	8800	Wis Y	6-39x5	G&O	Zen	L-N	L-N	Ex											

## Electric Commercial Cars

Name and Model Number	Total Weight Resting on Four Tires	Chassis Weight—Exclusive of Battery	Minimum Load Capacity	Maximum Load Capacity	Chassis Price	Maximum Speed	Location of Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Spring	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
Q. B-B.....						13			G-E	Own	C	D			S 36x4	DS36x3½	Own	107	.....
Q. B-C.....						11			G-E	Own	C	D			S 36x5	DS36x4	Own	135	.....
Q. B-D.....						10			G-E	Own	C	D			S 36x6	DS36x5	Own	143	.....
Walker 10.....	2400					14	H&S	60	G-E	Own	4	S	Cla	Mat	S 32x3½	S 32x4½	Ros	108°	66
Walker 20.....	3200					15	A	50	Wes	Own	5	Own	Own	Mat	S 34x3½	S 36x4	Ros	94°	66
Walker 25.....	3500					14	A	50	Wes	Own	5	Own	Own	Mat	S 34x4	S 36x5	Ros	101°	66
Walker 45.....	4400					14	A	50	Wes	Own	5	Own	Own	Mat	S 36x4	S 36x6	Ros	114°	66
Walker 50.....	4800					13	A	50	Wes	Own	5	Own	Own	Mat	S 36x5	S 36x8	Ros	128°	66
Walker 65.....	7000					11	A	50	G-E	Own	5	Own	Own	Mat	S 36x5	DS40x5	Ros	131°	66
Walker 75.....	7800					10	A	50	G-E	Own	5	Own	Own	Mat	S 36x6	DS40x6	Ros	141°	66
†Ward B.....	6500	2300			1770	14	S		*	Own	4	W	Own	Eat	P 30x5	P 30x5	Ros	91	.....
†Ward C.....	8400	2850			1960	13	S		*	Own	4	W	Own	Eat	P 30x5	P 32x6	Ros	96	.....
†Ward E.....	13000	4100			2430	12½	A		*	Own	4	W	Wis	Eat	S 34x5	S 36x7	Ros	114	.....
†Ward G.....	17000	4950			2760	11	A		*	Own	5	W	Wis	Eat	S 36x8	S 36x8	Ros	128	.....
†Ward K.....	25000	7750			3890	10	A		*	Own	5	W	Wis	Eat	S 36x6	S 36x10	Ros	160	.....
†Ward KS.....	30000	8075			4100	9½	A		*	Own	5	W	Wis	Eat	S 36x7	DS36x7	Ros	160	.....

NOTE: Battery Equipment on all above makes is at the option of the purchaser. Battery Location Abbreviations: A-amidships; H-under hood; and S-under seat. \*G-E or Wes

## KEY OF ABBREVIATIONS

For addresses of manufacturers listed below see Chilton Catalog and Directory

### Wheelbase

\*More than one wheelbase furnished.

### Tires

B—Balloons.  
P—Pneumatics standard equip.  
DP—Dual pneumatics standard equipment.  
S—Solids.  
DS—Dual solids.  
\*—Tires at extra cost.  
†—Pneumatics can be furnished at extra cost.

### Engine

Bud—Buda Co.  
Con—Continental M. Corp.  
D—Head and Side.  
FP—Full Pressure to all bearings including wrist pins.  
H—Overhead.  
HaS—American Car & Fdy. Co.  
Her—Hercules Motor Corp.  
I—In Head.  
Jackson—Master M. T. Mfg. Co.  
L—L-Head.  
Lyc—Lycoming M. Corp.  
PC—Pressure to all crankshaft and connecting-rod bearings.  
PG—Pump, Gravity & Splash.  
PS—Pressure with splash.  
SP—Circulating splash.  
T—T-Head.  
Wau—Waukesha M. Co.  
Wis—Wisconsin M. Mfg. Co.  
Yell—Yellow Sleeve V. E. Wks.  
X—Sleeve.

### Governor

Dup—Eisemann Magneto Corp.  
Han—Handy Gov. Co.  
K. P.—K. P. Products Co.  
McC—E. R. Klemm.  
Mon—Monarch Gov. Co.  
Non—Not Supplied.  
Pha—Bethlehem Fabricators, Inc.  
Pie—Pierce Governor Co.  
Sim—Eisemann Magneto Corp.  
Wau—Waukesha M. Co.

### Radiator

Bow—Bowerbank, E. R. Co.  
Bus—Bush Mfg. Co.  
Chi—Chicago Mfg. Co.  
Fed—Fedders Mfg. Co.  
G&O—G. & O. Mfg. Co.  
Har—Harrison Rad. Corp.  
Lon—Long Mfg. Co.  
McC—McCord Rad. & Mfg. Co.  
McK—McKinnon Dash Co.  
Mod—Modine Mfg. Co.  
Per—Perfex Corp.  
R-T—Rome-Turney Rad. Co.  
U. S.—U. S. Cartridge Co.  
You—Young Rad. Co.

### Fuel System

B.B.—Penberthy Injector Co.  
Car—Carter Carburetor Co.  
E—Electric Pump  
G—Gravity.  
Mar—Marvel Carburetor Co.  
O—Mechanical Pump  
P—Pressure.  
Sch—Wheeler Schebler Car. Co.  
Ste—Detroit Lubricator Co.  
Str—Stromberg Motor Dev. Co.  
Til—Tillotson Mfg. Co.  
V—Vacuum.  
Zen—Zenith-Detroit Corp.

### Electrical Systems

†—Generator & Starter at Extra Cost.  
†—Starter not supplied, Generator at Extra Cost.  
\*—Starter at Extra Cost.  
A-L—Electric Auto-Lite Corp.  
Apo—Apollo Magneto Corp.  
Bos-A—Am. Bosch Magneto Co.  
Bos-R—Rob. Bosch Magneto Co.  
Con—Conn. Tel. & Elec. Co.  
DJ—DeJon Elec. Corp.  
D-R—Delco-Remy Co.  
Dyn—Owen Dyneto Corp.  
Els—Eisemann Magneto Corp.  
Ext—Electric S. B. Co.  
Gor—R. J. Gorman Co., Inc.  
L-N—Leece-Neville Co.

N-E—North East Elect. Co.  
Non—Not Supplied.  
Pol—Prest-O-Lite Co.  
Sci—Scintilla Magneto Co.  
Spl—Splittorf Electrical Co.  
USL—USL Battery Corp.  
Ves—Vesta Battery Corp.  
Will—Willard S. B. Co.

### Clutch and Gearset

\*—Other ratios optional.  
†—Auxiliary two-speed transmission optional.  
A—Amidships.  
B & B—Borg & Beck Co.  
B-L—Brown-Lipe Gear Co.  
Cot—Cotta Trans. Corp.  
Cov—Covert Gear Co.  
Det—A. J. Detlaft Co.  
D-G—Detroit Gear & Mach. Co.  
D—Disk.  
Ful—Fuller & Sons Mfg. Co.  
H-S—Merchant & Evans Co.  
J—Unit with Jackshaft.  
K—Cone.  
Lon—Long Mfg. Co.  
M. M.—Mechanics Mach. Co.  
Mun—Muncie Products, Div. General Motors Corp.  
O—Disk in Oil.  
P—Plate.  
Roc—Rockford Drill. Mach. Co.  
U—Unit with Engine.  
W-G—Warner Gear Co.  
Yell—Yellow Sleeve V. E. Wks.

### Universal

B.G.—Universal Machine Co.  
Blo—Blood Bros. Mach. Co.  
Cle—Cleveland St. Prod. Corp.  
Har—Spicer Mfg. Co.  
M-E—Merchant & Evans Co.  
M. M.—Mechanics Machine Co.  
Pet—Cleveland Univ. Parts Co.  
Pic—Pick Mfg. Co.  
Spi—Spicer Mfg. Co.  
The—Thermold Rubber Co.  
U-M—Universal Machine Co.  
U-P—Universal Products Co.

### Front and Rear Axles

\*—Two speed.  
½—Semi-Floating.  
¾—Three-Quarter Floating.  
B—Straight Bevel.  
Cla—Clark Equip. Co.  
Col—Columbia Axle Co.  
Con—Continental Axle Co.  
C—Chain.  
D—Dead.  
Eat—Eaton Axle Co.  
F—Floating.  
I—Internal Gear.  
R—Double Reduction.  
S—Spiral Bevel.  
Sal—Salisbury Axle Co.  
She—Sheldon Axle & Spring Co.  
Shu—Shuler Axle Co., Inc.  
Tim—Timken Det. Axle Co.  
Tor—Eaton Axle & Spring Co.  
W—Worm.  
Wis—Wisconsin Parts Co.

### Brake

A—Rear Wheels only.  
B—Driveshaft and Rear Wheels.  
D—Jackshaft and Rear Wheels.  
E—4-Wheel Brakes.  
F—4-Wheel brakes with emergency on jackshaft.  
G—4-wheel brakes with emergency on driveshaft.  
H—4-wheel brakes with emergency on rear wheels.

### Service Brake Type

\*—Mechanical.  
†—Hydraulic.  
†—Vacuum Booster.  
\*—Compressed Air.

### Steering Gear

CAS—Columbus G & P. Co.  
D-G—Detroit Gear & Mach. Co.  
Dod—Dodge Bros. Co.  
Gem—Gemmer Mfg. Co.  
Han—Hannum Mfg. Co.  
Jac—Saginaw Steering Gear, Div. General Motors Corp.  
Lav—Hannum Mfg. Co.  
Ros—Ross Gear & Tool Co.